John Crawford,
M. D.

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A

TREATISE

ON

RUPTURES.

By PERCIVALL POTT,

SENIOR SURGEON

To St. BARTHOLOMEW's Hoſpital.

Chirurgia non quidem medicamenta atque victus rationem omittit, ſed manu tamen plurimum præſtat; eſtque ejus effectus inter omnes medicinæ partes evidentiſſimus.

A. CORN. CELSUS.

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C.A*

PREFACE.

THE diſeaſe which makes the ſubject of the following tract, is one in which mankind are, on many accounts, much intereſted; no age, ſex, rank, or condition of life is exempt from it; the rich, the poor, the lazy, and the laborious, are equally liable to it; it produces certain inconvenience to all who are are afflicted by it; it ſometimes puts the life of the patient in ſuch hazard, as to require one of the moſt delicate operations in ſurgery; and it has in all times, from the moſt antient, down to the preſent, rendered thoſe

who labour under it ſubject to the moſt iniquitous frauds and impoſitions.

The generality of mankind look upon a rupture as an imperfection in their form, as a diſeaſe which impairs their ſtrength, and leſſens their generative faculty; which apprehenſions, tho' abſolutely groundleſs, are ſo firmly rooted, in the majority of thoſe who are afflicted with the diſorder, as to make them not a little miſerable: they who lie in wait to avail themſelves of the weakneſſes of the infirm and fearful, are well acquainted with theſe fears, and very lucrative uſe do they make of them; they well know, that the man who regards his diſorder as an imperfection in his form, or as a cauſe of any debility, more particularly a venereal one,

one, will be very unwilling to have it known, and as glad to get rid of it, at any expence or trouble; by this means these impostors are furnished with opportunities of subjecting the ignorant, and credulous, to tedious confinements, painful applications, and even hazardous operations; and of defrauding the timorous, and bashful, of large sums of money, for imaginary diseases, and pretended cures.

Complaints of this sort, coming from the profession, are generally ill received, and being set to the account of prejudice, interest, and craft, are very little regarded; but in this mankind do us great injustice. A rupture is a disease, which, if judiciously and honestly treated from the first, can never be productive of

much profit to a ſurgeon; it requires very little attendance, and neither external application, nor internal medicine; tho' the reduction of the gut, and the application of a proper bandage, are neceſſary, yet this is in general ſo ſoon, and ſo eaſily accompliſhed, that it muſt be obvious that no great emolument can from thence be derived; and therefore, if the profeſſion may be allowed to be impartial in any thing which relates to themſelves, I think they may in this, from which they never can reap conſiderable profit, unleſs the diſeaſe has been greatly neglected or ill treated: it is from fraud and deluſion principally that ſuch advantage can be derived; it is from the patient's ignorance of the true nature of his diſorder, and from bold and lying promiſes made of a perfect cure.

It is far from my intention to defend the body of ſurgeons from any accuſation which may juſtly be brought againſt them; but as the reaſon given by moſt of the patrons of quackery for their ſupporting it, is, that the medical world thro' mere obſtinacy, never depart from the cuſtoms of their anceſtors, nor attempt any thing new, tho' mankind might be much benefited by ſuch inventions, and as I think that ſuch imputation cannot with any colour of juſtice be made againſt us, I would beg leave to be indulged a few words on this ſubject.

That the merit of many of the old practitioners was great; that they left behind them many proofs both of their ſagacity, and their dexterity; that we have received large informa-

tion from their writings; and that, *cæteris paribus*, he who is beſt acquainted with them will be the beſt ſurgeon, is well known to every one who is at all converſant with them, and can be denied only by thoſe who are not. But, on the other hand, it muſt alſo be allowed, that both their theory and their practice laboured under great diſadvantages, which rendered their judgment of many diſeaſes erroneous, and their treatment of them irrational and unſucceſsful.

The very imperfect ſtate of their anatomy was one great ſource of error; which kind of knowledge has been ſo cultivated in our times as to convert ignorance into a vice, and to render thoſe who are deficient in it perfectly inexcuſable.

As this is the only true and ſolid baſis from which all chirurgical knowledge muſt for ever ſpring, ſo it has of late years been productive of many real, and great improvements in the art.

The antient ſurgery was coarſe, and loaded with a farrago of external applications, ſome of which were horridly, and yet unneceſſarily painful, and others altogether uſeleſs; whilſt the operative part of the art was encumbered with a multitude of awkward, unmanageable inſtruments, and pieces of machinery.

The practitioners of the preſent time have brought the practice into a much narrower compaſs, have rendered it leſs painful and more intelligible; they have reduced the num-

ber of inſtruments, and by the extreme ſimplicity of thoſe which they now uſe, they have conſiderably aſſiſted the dexterity of an operator, and ſhortened the time of an operation; they have almoſt thrown aſide the burning cautery, and are much more ſparing in the uſe of cauſtic applications than their predeceſſors uſed to be; they now accompliſh many cures by mild and gentle means, which formerly were thought not obtainable but by much ſeverity; to ſay nothing of the indelible marks which ſuch practice left behind it. The havock formerly made both of limbs and lives by the uſe of long forceps in gun-ſhot wounds; the exploſion of the long prevailing notion that ſuch wounds were poiſonous; the eaſy ſuperficial method with which they are now in general treated,

ed, and the opportunities which ſuch treatment gives for nature to exert thoſe powers with which the Almighty Author has furniſhed her, do credit to the modern practitioners: the double inciſion in amputations; the preſent method of removing cancerous breaſts, and encyſted tumors; the lateral operation for the ſtone in the bladder; the uſe of the cutting gorget; amputation in the joint of the ſhoulder; the preſent method of letting out all the water at once from an aſcites; the improvements in the treatment of the fiſtula lachrymalis; the cure of the vari and valgi, with many others which might be named; in ſhort, the ſuperior neatneſs, eaſe, and expedition of the preſent ſurgery, when compared to the antient, are certain and undoubted improvements made by the modern

practi-

practitioners, and ſuch as mankind are much benefited by, as their pains are thereby leſſened, the elegance of their figure preſerved, and the time of their confinement ſhortened; all which will, I preſume, be allowed to be advantages, while human nature ſhall remain ſenſible of pain, while ſcars ſhall be thought deformities, or confinement be deemed irkſome.

Nor is our conduct, with regard to the particular diſeaſe which makes the ſubject of the following tract, in the leaſt degree blameable; ſo far from it, that the treatment which we meet with ſometimes is moſt ſingularly unjuſt, we being often ſeverely cenſured for that, from which we ought to derive praiſe: ſo little do we deſerve the reflection caſt upon us, of being content with what our fa-

fathers taught us, and neither improving the art ourſelves, nor encouraging thoſe who do; that, on the contrary, much pains have been taken to improve this particular part of ſurgery, and the publick ought to thank us for not perſevering in the uſe of the old, tedious, painful, and hazardous proceſſes, after we found them to be in general ineffectual.

But tho' I would at all times vindicate the profeſſion from every unjuſt attack, I would by no means be ſuppoſed to think that there is not large room left for the induſtry both of us and our ſucceſſors; ſome of the operative parts of the art are ſtill capable of improvement, and the treatment of ſome diſeaſes might certainly be altered for the better.

Whether

Whether our future labours ſhall be crowned with ſucceſs or not, ſtill I think it will appear to every one at all verſed in the hiſtory of ſurgery, that the practitioners of the preſent time are ſo far from deſerving the character which they who know nothing of the art have given of them, that they really deſerve a very contrary one; ſince, inſtead of obſtinately adhering to the practice of their anceſtors, they have differed from it in many inſtances, where they found they could do it with ſafety, and to the advantage of mankind; and have endeavoured to advance the utility of their profeſſion, by the only means whereby it is capable of being improved, viz. by a ſedulous application to anatomy, by the frequent examinations of dead morbid bodies, and by making ſuch

expe-

experiments on the living, as they had juſt reaſon to think would prove beneficial; candidly acknowledging at the ſame time where they have found their art inſufficient, and not perſiſting in tormenting their fellow-creatures merely for gain.

In the following treatiſe I have endeavoured to expreſs myſelf in as plain, explicit, and intelligible a manner as I am able, and the ſubject will admit; being deſirous as much as I can to inform mankind of the true nature of the diſeaſe, of the danger they incur, and the frauds they are liable to, from the ignorance of one ſet of quacks, and the worſe qualities of another; to ſhow what the art of ſurgery in judicious hands is capable of doing, and how eſſentially the conduct of an impoſtor

poſtor differs from that of an honeſt man, who will never be aſhamed of confeſſing that he cannot do what is not in his power.

In the former edition of this book were many faults; ſome of the preſs, ſome of the author; in this ſome pains have been taken to leſſen both; the typographical errors are, I think, now but few, and wherever it has appeared to me that the matter of the treatiſe was obſcure, erroneous, or deficient, I have altered, corrected, and added to it.

I am ſtill far from thinking that it is perfect or faultleſs; but, on the other hand, I am not conſcious of having advanced any thing in it which is not ſtrictly true, and agreeable to the moſt ſucceſsful practice: improve-

improvement of the art of ſurgery, and the relief of mankind, are my two principal objects; and if what I have now, or at any other time written, ſhall be found to have contributed toward accompliſhing either of thoſe ends, I hope the reader will excuſe all thoſe leſſer faults,

——— *quas aut incuria fudit,*
Aut humana parum cavit natura.

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A

TREATISE

ON

RUPTURES.

SECTION I.

BY the term RUPTURE, DESCENT, or HERNIA, is in general meant a ſwelling produced by the falling down, or protruſion, of ſome part, or parts, which ought naturally to be contained within the cavity of the belly.

The places in which theſe ſwellings make their appearance, in order to form what is called a RUPTURE, are the groin, the navel, the labia pudendi, the upper and fore part of the thigh, and every point of the anterior part of the abdomen.

The parts, which by being thruſt forth from the cavity, in which they ought naturally to remain, and which form theſe tumours, are, a portion of the omentum, a part of the inteſtinal canal, and [a] ſometimes (tho' very rarely) the ſtomach.

From theſe two circumſtances, of ſituation, and contents, are derived all the different appellations by which herniæ are diſtinguiſhed: for example, they are called *inguinal*, *ſcrotal*, *femoral*, *umbilical*, and *ventral*, as they happen to make their appearance in the groin, cod, thigh, navel, or belly. If a portion of inteſtine only forms it, it is called *enterocele*, *hernia inteſtinalis*, or gut-rupture; if a piece of omentum only, *epiplocele*, *hernia omentalis*, or caul-rupture; and if both inteſtine and omentum contribute mutually to the formation of the tumor, it is called *entero-epiplocele*, or compound rupture.

If the piece of gut or caul deſcends no lower than the groin, it is ſaid to be incompleat, and is called *bubonocele*; if the ſcrotum be occupied by either of them, the

[a] The liver, ſpleen, uterus, bladder, &c. have at different times been found in different herniæ, but theſe are ſo rare as not to come within a general deſcription.

the rupture is ſaid to be compleat, and bears the name of *oſcheocele:* the latter uſed by our forefathers to be attributed to laceration of the peritoneum, the former to its dilatation merely.

The opinion, that the ſcrotal hernia is occaſioned by a forcible diviſion, or breach, made in the peritoneum, has always been, and ſtill is, with the unknowing, a very prevailing one, tho' without any foundation in truth; both the ſcrotal, and femoral, paſs out from the abdomen by openings which are natural to every human body; as well thoſe who have not ruptures, as thoſe who have. The former, that is the ſcrotal, deſcend by means of an aperture in the tendon of the external oblique muſcle, near the groin; deſigned for the paſſage of the ſpermatic veſſels in men, and the ligamenta uteri in women; and the latter, under the hollow, made by Poupart's, or Fallopius's ligament, at the upper part of the thigh, along with the great crural vein and artery.

The pair of muſcles called obliqui externi aſcendentes, cover all that part of the belly which is without bone, and the lower and anterior parts of the thorax. They are

fleſhy on the ſides, and tendinous in the middle, and lower part; they ſpring from the ſeventh and eighth ribs, and from all below them, by fleſhy portions, which indigitate with correſponding parts of two other muſcles, called the ſerratus major anticus, and the latiſſimus dorſi, and becoming tendinous, are inſerted into what is called the linea alba, the ſpine of the os ilium, and into the os pubis.

At the lower part of the belly, on each ſide, a little above the laſt mentioned bone, the fibres of the tendon of this muſcle ſeparate from each other, and form thereby two apertures, thro' which paſs the ſpermatic veſſels in men, and the ligamenta uteri in women. Theſe openings are of an oval figure, and have an oblique direction from above downward; the upper part of them is rather wider than the lower, and they are of larger ſize in men than in women.[b]

The

[b] A detachment of fibres from the faſcia lata of the thigh is generally united with the tendon compoſing the aperture in the obliquus externus, which mixture or connexion of fibres, will in ſome meaſure account for the pain which they who labour under ſtrangulated ruptures feel upon ſtanding upright, and the relief which bending the thigh upward toward the belly always gives them.

The tendinous fibres of this muſcle, as they proceed from its fleſhy part obliquely downward, have ſeveral ſmall apertures for the paſſage of veſſels and nerves; and at their inſertion into the os pubis, they croſs one another, and are as it were interwoven, by which means their inſertion is ſtrengthened, and their attachment made firmer.

What is called by the particular name of Poupart's ligament is really nothing more than the lower border of this tendon, ſtretched from the fore part of the os ilium, or haunch-bone, to the os pubis, and turned, or folded inward at its inferior edges.

The other muſcles of the belly are the obliquus internus, the tranſverſalis, the rectus, and the pyramidalis, none of which have any concern with our preſent ſubject. The ſpermatic chord does indeed paſs under the lower edge or border of the two firſt of theſe, but at ſuch diſtance, and in ſuch manner, that no action of theſe muſcles can any way affect, or ever make any ſtricture either on it, or on a hernia accompanying it; they have no perforations, or apertures, tho' ſo many writers of credit (even late ones) have both deſcribed

and delineated them,[d] consequently they can have no share in the embarrassment of the parts contained in a hernial sac, nor require any division in that operation, which becomes sometimes necessary towards setting them free: which is a fact of no small consequence to an operator.

The

[d] However incredible and strange it may seem, yet I am convinced, that operations have been performed by the information obtained from books only, without any previous anatomical knowledge, any practice on dead bodies, and hardly any, if any, opportunities of seeing such operations performed by others on the living: how grossly must such an operator be deceived by the account of the rings, as they are usually, tho' absurdly, called, of the abdominal muscles: after he has divided the first, or that of the external oblique, he will expect to find a second in the internal, and a third in the transversalis, and will never suppose that he is got into the cavity of the belly, 'till he has divided all the three; it is therefore of the utmost consequence that this matter be set right, and that, notwithstanding what has been said on this subject by writers of great eminence, every surgeon be informed that the external oblique muscle is the only one which has any opening in it; that the description given by Mr. Cheselden of these muscles, in the last edition of his anatomy, is erroneous, and all descriptions and all delineations (some of which are to be found even in late writers) of more openings than that single one on each side, are not representations of nature, but are the images of a luxuriant fancy, and have no foundation in truth.

The inside of these muscles, and indeed the whole cavity of the belly is lined with a smooth, firm, but easily dilatable membrane, called the peritoneum, a minute account of which would lead me beside my present purpose, and therefore I shall only observe, that it lines the whole abdomen, and gives an external coat to every viscus contained in it.

Behind the peritoneum lies a loose, cellular membrane, by some called its appendix, which is found in different quantity, in different places. In some the cells are empty, and are immediately visible upon being blown into; in other parts it is plentifully stocked with fat, and, tho' somewhat varied in its appearance in different places, is found in most parts of the body.

This cellular membrane, void of fat, surrounding the spermatic vessels, as they pass forth from the cavity of the abdomen into the groin, is called the tunica vaginalis of the chord, or tunica communis vasorum spermaticorum; which chord, thus enveloped, passing under the inferior edge or border of the transversalis, and internal oblique muscles, and thro' the perforations or natural apertures of the external oblique,

deſcends thro' the groin to the teſticle, in ſuch manner, that the ſpermatic veſſels in their paſſage from the cavity are really and truly behind the peritoneum.

The tunica vaginalis teſtis is a membrane perfectly diſtinct from this, forming a particular cavity which includes the glandular ſubſtance of the teſticle, and has nothing to do with a common rupture. In every fœtus, until, or very near until the time of birth, there is an open and free communication between the cavity of this laſt tunic, and that of the belly, for the paſſage of the teſticle from the abdomen into the ſcrotum: ſoon after birth this paſſage cloſes and becomes impervious, nor is there ever after the time of ſuch cloſing, any communication between the cavity of the belly, and that of the tunica vaginalis teſtis. But tho' the paſſage remains in general for ever ſhut, yet the place where its orifice, or mouth, was, may always be known by a kind of cicatricula, much like to what appears within the abdomen, oppoſite to the navel, or place where the umbilical veſſels of the fœtus paſſed to and from the placenta; at the place of which cicatricula, the peritoneum is generally weaker

weaker than elſewhere. Now, if it be remembered, that this weak part is neceſſarily oppoſite to the natural opening in the tendon of the external oblique muſcle, that neither the internal oblique muſcle, nor the tranſverſalis come low enough to make any reſiſtance to whatever ſhall preſs againſt this part, and that the acknowledged uſe of the muſcles of the abdomen is by preſſing on all its contained viſcera to aſſiſt digeſtion, the expulſion of the fæces, urine, and fœtus; and that in many natural actions, ſuch as ſneezing and coughing, &c. and in all great exertions of ſtrength and force, our erect poſture muſt neceſſarily occaſion a preſſure to be made againſt the lower part of the inſide of the belly, by ſome of its contents; a very probable and ſatisfactory account of the origin of the common inguinal and ſcrotal hernia may be collected.

In young children this deſcent, or protruſion, happens moſt frequently when the child ſtrains in crying, or in expelling its fæces: as ſoon as the effort ceaſes, and the child is quiet, the part generally returns up again, and the ſwelling diſappears; the nurſes call it wind, and it is at firſt moſt

frequently neglected, as the child is not apparently injured by it, and few people are sufficiently aware of its possible consequences.

Not that the disease is by any means confined to children: adults frequently are attacked by it, either by falls, strains, great exertions of strength, difficulty of expelling hard fæces, or a general laxity of frame.

Whether the rupture be inguinal, scrotal, or femoral, and whether it consists of intestine, or omentum, or both, the protruded part must carry before it a part of the membrane which lines all the internal surface of the abdominal muscles, or rather the whole cavity of the abdomen, and is called peritoneum. This portion of the peritoneum, including the piece of gut or caul, is known by the name of the *hernial sac*, and is larger, or smaller, according to the quantity of intestine, or omentum, contained in it; it is at first small and thin, and in ruptures which are not of the congenial kind, seldom comes lower than the groin [e] at first, but by repeated descents it extends

[e] I will not say positively that all those ruptures which appear in the scrotum of very young children are congenial,

extends itſelf lower and lower, 'till it gets quite into the ſcrotum, and ſtill as it is extended in length, it becomes thicker and firmer in texture, 'till in old age, or old ruptures, it is found of very conſiderable thickneſs.

As all parts of the peritoneum are of a very extenſible, dilatable nature, and as the hernial ſac has this property in common with many other parts of the body, of thickening as it extends, it does in ſome caſes ſtretch to a very conſiderable ſize, and contain ſuch a quantity of inteſtine and omentum as is almoſt incredible. This circumſtance of its becoming thicker as it is more extended is perhaps the reaſon why ſome people, and among them the late Mr. Cheſſelden, have been of opinion that the ſac of a hernia was not an elongation of the peritoneum, but produced like that of an aneuriſm, and ſome other tumors, by mere preſſure of the common cellular membrane; an opinion, which is manifeſtly and demonſtrably erroneous.

Whether

nial, (that is, have the tunica vaginalis teſtis for their hernial ſac) but all thoſe which I have had an opportunity of examining have proved ſo; and I believe it would be no very erroneous criterion, whereby to diſtinguiſh the common rupture from the congenial, in infants.

Whether the hernial ſac in its infant ſtate, while it is very thin, and may poſſibly have contracted no adheſion to the cellular membrane compoſing the tunica communis of the ſpermatic veſſels, does ever return back into the belly again, I will not take upon me to determine abſolutely, but am much inclined to think it does not, as well from the facility with which the gut or caul moſt commonly deſcend after they have been down a few times, as from a fullneſs which is always to be perceived in the ſpermatic proceſs of ſuch people as have ever been ruptured. Some few of theſe I have had opportunities of opening after death, and have always found the ſac, either in the groin or ſcrotum, (plainly a continuation of the peritoneum) remaining firmly attached to, and connected with the tunica communis; nor did I ever ſee, either in the dead or the living, any reaſon or authority for the ſuppoſition, that it is capable of returning back into the abdomen after it has been fairly puſhed out thro' the aperture in the tendon.[f]

I inten-

[f] This is a circumſtance of ſome importance in the general treatment of ruptures. Upon it depends the truth or

I intentionally avoid saying any thing about the old doctrine of the difference between dilatation and laceration of the peritoneum, it being now generally known and acknowledged, that to whatever size the hernial sac may be extended, and however large its contents may be, it is merely dilated, and hardly ever burst or broken. The particular kind of case, which a few years ago gave rise to a sort of renewal of the old doctrine of ruptures by laceration of the hernial sac, viz. that kind of hernia in which the gut and testicle are found in the same bag, and in immediate contact with each other, being now sufficiently known

or falsehood of the late doctrine of the possibility of returning the intestine included in the hernial sac, and confined by such a stricture of the sac itself, as may prove fatal after the gut is fairly got into the abdomen again. A case, of which more than one instance has been given to us, but in which I am much inclined to believe that some mistake has been made, and which I also think may be accounted for in another and more satisfactory manner. Upon this also depends the practicability or impracticability of returning a strangulated piece of gut back into the belly, after having divided the stricture made by the tendon, without opening the hernial sac, and consequently the propriety or impropriety of making such attempt. All endeavours to do what is impracticable, being in cases of importance much worse than doing nothing.

known and explained. See Sect. X. of this Tract.

THE ſigns, or marks, of a common inguinal or ſcrotal rupture, are in general a ſwelling in the upper part of the ſcrotum, or in the groin, beginning at the opening in the abdominal muſcles where the ſpermatic veſſels paſs down from the belly; which tumor has a different appearance, and different feel, according to the nature of its contents, and to the ſtate and quantity of them.

If a portion of inteſtine forms it, and that portion be ſmall, the tumor is ſmall in proportion; but tho' ſmall, yet if the gut be diſtended with wind, inflamed, or have any degree of ſtricture made on it, it will be tenſe, reſiſt the impreſſion of the finger, and give pain upon being handled. On the contrary, if there be no ſtricture made by the tendon, and the inteſtine ſuffers no degree of inflammation, let the prolapſed piece be of what length it may, and the tumor of whatever ſize, yet the tenſion will be little, and no pain will attend the handling it; upon the patient's coughing, it will feel as if it was blown into, and in general

general it will be found very eaſily return-able.

If the hernia be of the omental kind, the tumor has a more flabby and a more unequal feel; it is in general perfectly indolent, is more compreſſible, gives the ſcrotum a more oblong, and leſs round figure, than it bears in an inteſtinal hernia; and if the quantity be large, and the patient adult, it is in ſome meaſure diſtinguiſhable by its greater weight.

If it conſiſts of both inteſtine and omentum, the characteriſtic marks will be leſs clear than in either of the ſimple caſes, but yet will to any body who is accuſtomed to theſe diſeaſes be ſufficiently ſo, to enable them to diſtinguiſh it from any other complaint.

The only diſeaſes with which a true hernia can be confounded, are the *venereal bubo*, the *hydrocele*, and that defluxion on the teſticle, called *hernia humoralis*; from each of which it is certainly very diſtinguiſhable.

The circumſcribed incompreſſible hardneſs, the ſituation of the tumor, and its being free from all connection with the ſper-

ſpermatic proceſs, will ſufficiently point out the firſt, at leaſt while it is in a recent ſtate; and when it is in any degree ſuppurated, he muſt have a very ſmall ſhare of the *tactus eruditus*, who cannot feel the difference between matter, and either a piece of inteſtine, or omentum.

The perfect equality of the whole tumor, the freedom and ſmallneſs of the ſpermatic proceſs above it, the power of feeling the ſpermatic veſſels, and the vas deferens in that proceſs, its being void of pain upon being handled, the fluctuation of the water, the gradual formation of the ſwelling, its having begun below and proceeded upwards, its not being affected by any poſture or action of the patient, nor increaſed by his coughing or ſneezing, together with the abſolute impoſſibility of feeling the teſticle at the bottom of the ſcrotum,[g] will always to any intelligent perſon

[g] By this remark it may poſſibly be thought that I mean to ſay, that the teſticle is always to be felt at the bottom of the ſcrotum in a true hernia; which in general is true, but not without ſome exceptions. In recent ruptures, of the common kind, whether of the gut, or caul, while the hernial ſac is thin, has not been long, or very

perſon prove the diſeaſe to be a *hydrocele* of the *tunica vaginalis teſtis*.

And in the hernia humoralis, the pain in the teſticle, its enlargement, the hardened ſtate of the epidydimus, and the exemption of the ſpermatic chord from all unnatural fullneſs, are ſuch marks as cannot eaſily be miſtaken; not to mention the generally preceding gonorrhea. But if any doubt ſtill remains of the true nature of the diſeaſe, the progreſs of it from above downward, its different ſtate and ſize in different poſtures, particularly lying and ſtanding, together with its deſcent and aſcent, will, if duly attended to, put it out of all doubt, that the tumor is a *true hernia*.

If an attempt be made for the reduction of the rupture, and it conſiſted of a piece of inteſtine, it generally ſlips up all at

 once.

very much diſtended, and the ſcrotum ſtill preſerves a regularity of figure; the teſticle may almoſt always be eaſily felt at the inferior and poſterior part of the tumor; but in old ruptures, which have been long down, in which the quantity of contents is large, the ſac conſiderably thickened, and the ſcrotum of an irregular figure, it often happens that the teſticle is not to be felt, neither is it in general eaſily felt in a *congenial hernia*, for a very obvious reaſon.

once. In its return it makes a kind of guggling noiſe, and when it is up, the ſcrotum and proceſs will be found free from any præternatural fullneſs. If a portion of omentum formed it, it retires more gradually, without any of the noiſe of the former, and requires to be followed by the finger to the laſt. If both gut and caul contributed to the formation of it, the gut generally goes up firſt, and leaves a flabby irregular kind of body behind it, which ſtill poſſeſſes the proceſs or ſcrotum, according as the diſeaſe was bubonocele, or oſcheocele, and requiring ſtill farther compreſſion, at laſt aſcends.

The inteſtine ſaid to be moſt frequently found in a ſcrotal hernia, is the ileum, tho' it is alſo allowed that the cœcum, and part of the colon, have been met with.

This is one of the many maxims which writer receives from writer, and inattentive readers all believe.

That a portion of the ileum does often deſcend in a hernial ſac is beyond all doubt, but that the deſcent, or more properly protruſion, of a part of the cœcum and colon is rare, is not true, for it happens very frequently. Perhaps it would

not

not bear to be eſtabliſhed as a general rule; but from what has fallen within my obſervation, in frequently performing the operation for a ſtrangulated rupture, it has appeared to me, that the greater number of thoſe in whom it has become neceſſary (all attempts to reduce the parts by hand having proved fruitleſs) have conſiſted of the cœcum with its appendicula, and a portion of the colon. Nor will the ſize, diſpoſition, and irregular figure of this part of the inteſtinal canal, appear upon due conſideration a very improbable cauſe of the difficulty or impoſſibility of reduction by the hand only.

I have already mentioned the principal circumſtances by which hernias are diſtinguiſhable from other diſeaſes. But it is alſo to be obſerved that the ſame kind of rupture in different people, and under different circumſtances, wears a very various face; the age and conſtitution of the ſubject, the date of the diſeaſe, its being free, or not free from ſtricture, or inflammation, the ſymptoms which attend it, and the probability or improbability of its being returnable, neceſſarily producing much variety; the degree of hazard attending this

complaint will be alſo more or leſs as it ſhall happen to be circumſtanced.

If the ſubject be an infant, the caſe is not often attended with much difficulty, or hazard; the ſoftneſs and ductility of their fibres generally rendering the reduction eaſy as well as the deſcent; and tho' from neglect or inattention it may fall down again, yet it is as eaſily replaced, and ſeldom produces any miſchief: I ſay ſeldom, becauſe I have ſeen an infant, one year old, die of a ſtrangulated hernia, which had not been down two days, with all the ſymptoms of mortified inteſtines.

If the patient be adult, and in the vigor of life, the conſequences of neglect, or of mal-treatment, are more to be feared than at any other time, for reaſons too obvious to need relating. The great and principal miſchief to be apprehended in an inteſtinal hernia, is an inflammation of the gut, and an obſtruction to the paſſage of the aliment, and fæces thro' it; which inflammation and obſtruction are generally produced by a ſtricture made on the inteſtine, by the borders of the aperture in the tendon of the abdominal muſcle, thro' which the

hernia

hernia and its ſac paſs. Now it muſt be obvious, that the greater the natural ſtrength of the ſubject is in general, and the more liable to inflammation, the greater probability there muſt be of ſtricture, and the more miſchief likely to enſue from it. In very old people, the ſymptoms do not uſually make ſuch rapid progreſs, both on account of the laxity of their frame, and their more languid circulation; and alſo that their ruptures are moſt frequently of ancient date, and the paſſage a good deal dilated; but then, on the other hand, it ſhould alſo be remembered that they are by no means exempt from inflammatory ſymptoms, and that if ſuch ſhould come on, the infirmity of old age is no favorable circumſtance in the treatment which may become neceſſary.

If the diſeaſe be recent, and the patient young, immediate reduction, and conſtant care to prevent its puſhing out again, are the only means whereby it is poſſible to obtain a perfect cure.

If the diſeaſe be of long ſtanding, has been neglected, or ſuffered to be frequently down, and has given little or no trouble,

the aperture in the abdominal muſcle, and the neck of the hernial ſac may both be preſumed to be large, which circumſtances in general render immediate reduction leſs neceſſary and leſs difficult, and alſo fruſtrate all rational expectation of a perfect cure. On the contrary, if the rupture be recent, or tho' old has generally been kept up, its immediate reduction is more abſolutely neceſſary, as the riſque of ſtricture is greater from the ſuppoſed ſmallneſs of the aperture, and narrowneſs of the neck of the ſac. If the rupture be very large, and ancient, the patient far advanced in life, the inteſtine not bound by any degree of ſtricture, but does its office in the ſcrotum regularly, and no other inconvenience be found to attend it, but what proceeds from its weight, it will in general be better not to attempt reduction, as it will in theſe circumſtances moſt probably prove fruitleſs, and the handling of the parts in the attempt, may ſo bruiſe and injure them as to do miſchief: but this muſt be underſtood to be ſpoken of thoſe only in which there is not the ſmalleſt degree of ſtricture, nor any ſymptom of obſtruction

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in the inteſtine; ſuch circumſtances making reduction neceſſary at all times, and in every caſe.

With regard to the contents of a hernia, if it be a portion of omentum only, and has been gradually formed, it ſeldom occaſions any bad ſymptoms, tho' its weight will ſometimes render it very troubleſome. But if it be produced ſuddenly by effort or violence, that is, if a conſiderable piece of the caul by accident ſlip down at once, it will ſometimes prove painful, and cauſe very diſagreeable complaints; the connection between the omentum, ſtomach, duodenum, &c. being ſuch, as to render the ſudden deſcent of a large piece of the firſt ſometimes productive of nauſea, vomiting, cholic, and all the diſagreeable ſymptoms ariſing from the derangement of theſe viſcera. When the piece of caul is engaged in ſuch a degree of ſtricture as to prevent the circulation of blood through it, it will ſometimes, by becoming gangrenous, be the occaſion of very bad ſymptoms, and even of death, as I have more than once ſeen; and thus, as a mere omental hernia, it may ſometimes be ſubject to great hazard. But even tho' it ſhould

never be liable to the juſt-mentioned evil, that is, tho' the portion of the caul ſhould remain uninjured in the ſcrotum, yet it rénders the patient conſtantly liable to hazard from another quarter; it makes it every moment poſſible for a piece of inteſtine to ſlip into the ſame ſac, and thereby add to the caſe all the trouble and all the danger ariſing from an inteſtinal rupture. It is by no means an uncommon thing for a piece of gut to be added to a rupture, which had for many years been merely omental, and for that piece to be ſtrangugulated, and require immediate help.

An old omental hernia is often rendered not reducible, more by an alteration made in the ſtate of the prolapſed piece of caul, than by its quantity. It is very common for that part of the omentum which paſſes thro' the neck of the ſac to be compreſſed into a hard, ſmooth body, and loſe all appearance of caul, while what is below in the ſcrotum is looſe and expanded, and enjoys its natural texture: in this caſe reduction is often impoſſible, from the mere figure of the part; and I have ſo often ſeen this, both in the living and the dead,

that

that I am ſatisfied that for one omental rupture rendered irreducible by adheſions, many more become ſo from the cauſe abovementioned.

In the ſac of old omental ruptures that have been long down, and only ſuſpended by a bag truſs, it is no very uncommon thing to have a pretty conſiderable quantity of fluid collected; this in different ſtates and circumſtances of the diſeaſe is of different color, and conſiſtence, and ſeldom ſo much in quantity as to occaſion any particular attention to it; but, on the other hand, it ſometimes is ſo much in quantity as to become an additional diſeaſe to the original one: I have more than once been obliged to let it out, in order to remove the inconvenience ariſing from its weight, and the diſtention of the ſcrotum, which I have alſo ſeen become gangrenous by the neglect of this operation.

If the hernia be of the inteſtinal kind, merely, and the portion of gut be ſmall, the riſque is greater, ſtrangulation being more likely to happen in this caſe, and more productive of miſchief, when it has happened; for the ſmaller the portion of gut is which is engaged, the tighter the

tendon

tendon binds, and the more hazardous is the conſequence. I have ſeen a fatal gangrene, in a bubonocele, which had not been formed forty-eight hours, and in which the piece of inteſtine was little more than half an inch. There are few practitioners who have ſeen buſineſs, but know the truth of this; but perhaps the reaſon of it is not ſufficiently explained to the unknowing: it is this; when a conſiderable portion of inteſtine paſſes out from the belly in a hernial ſac, it neceſſarily and unavoidably carries with it a proportional quantity of the meſentery, which every body knows is a ſtrong double membrane. When the prolapſed part is at all conſiderable, this double membrane is again in ſome meaſure folded on itſelf, and takes off a good deal of the effect of the ſtricture on the inteſtine. Now altho' this circumſtance will not prevent the effect, if the means of relief be totally neglected, yet it will moſt certainly retard the evil, and give more time for aſſiſtance; whereas, when there is little or none of the meſentery gets thro' the tendon, and the thin, tender inteſtine bears all the force of the ſtricture,

ſtricture, it is immediately brought into hazard.

The practical inference to be drawn from hence is too obvious to need mentioning.

In the inteſtinal, as in the omental hernia, they which have been often or long down, are in general more eaſily returned, and do not require ſuch immediate aſſiſtance, as they which have ſeldom been down, or have recently deſcended, and in the one kind of hernia as well as in the other, the ſtate of the hernial ſac with regard to ſize, thickneſs, &c. depends very much on the date of the diſeaſe, and the regard that has been paid to it.

If the hernia be cauſed by a portion of the inteſtine ileum only, it is in general more eaſily reducible than if a part of the colon has deſcended with it, which will alſo require more addreſs and more patience in the attempt. The reduction of a mere inteſtinal hernia too (cæteris paribus) will always remain more practicable than that of a mere omental one, after it has attained to a certain ſize and ſtate, as the part contained within the former is liable to leſs alteration of form than that within the

the latter, which alteration has already been mentioned as no infrequent hindrance of the return of an old caul rupture.

Not that the parts within a mere inteſtinal hernia are abſolutely exempt from ſuch an alteration, as may render their return into the belly abſolutely impracticable even where there is no ſtricture; for I have ſeen that part of the meſentery, which has lain long in the neck of the ſac of an old rupture, ſo conſiderably hardened and thickened, as to prove an inſuperable obſtacle to its reduction.

Upon the whole, every thing conſidered, I think it may be ſaid, that an inteſtinal rupture is ſubject to worſe ſymptoms, and a greater degree of hazard than an omental one, tho' the latter is by no means ſo abſolutely void of either as it is commonly ſuppoſed to be. That bad ſymptoms are more likely to attend a recent rupture than one of ancient date: that the deſcent of a very ſmall piece of inteſtine is more hazardous than that of a larger: that the hernia which conſiſts of gut only is in general attended with worſe circumſtances than that which is made up both of gut and

and caul: and that no true judgment can be formed of any rupture at all, unleſs every circumſtance relating to it be taken into conſideration.

THE cure of a rupture is either perfect, (called alſo radical) or imperfect, which is called palliative.

This diſtinction, which is juſt and true, and founded both on reaſon and experience, has frequently been miſunderſtood by the generality of mankind, and has therefore been the cauſe of much undeſerved cenſure on the practitioners of ſurgery.

The truth is, that tho' the events are extremely different, yet the chirurgical means which are made uſe of in either caſe are exactly the ſame, viz. reduction of the protruded parts, and retention of them when ſo reduced by proper bandage; theſe ſometimes, and in ſome circumſtances produce a perfect cure, at other times, and under other circumſtances, prove only a palliative one; and this uncertainty of event, being dependent on cauſes, which a ſurgeon can neither foreſee nor direct with any tolerable degree of certainty, ſhould

warn him againſt being too forward in making a promiſe.

To thoſe who are ignorant of the anatomical ſtructure and diſpoſition of the parts concerned in the diſeaſe, this aſſertion has the air of a paradox; they naturally ſuppoſe that the means which are or ſhould be made uſe of to obtain a radical or perfect cure, are or ought to be different from thoſe uſed toward obtaining only a palliative one, and in this miſtake they are confirmed by the bold, tho' falſe, aſſertions of all rupture quacks.

To labour under a troubleſome diſorder, perhaps in the moſt joyous and active part of life, is very diſagreeable; to be told that a palliative cure, by the conſtant uſe of a truſs, is all that can reaſonably be expected, gives ſmall comfort, and renders the inſinuation, that the regular profeſſors of ſurgery do not underſtand the proper treatment of this diſeaſe, credible, or at leaſt makes it be believed; *quod volumus, facile credimus.* Ignorance of the true nature of the diſorder, with a ſtrong deſire to be well, on the ſide of the patient, and bold plauſible promiſes on the ſide of the pretender, encourage the deluſion, 'till time,

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and the continuance of the rupture, prove the fraud, which few are found ingenuous enough to own. Whether it proceeds from a falſe baſhfulneſs which makes a man be aſhamed of acknowledging that he has been impoſed upon; or from a deſire merely to conceal the diſorder; from a pleaſure ariſing from ſeeing others deceived as well as themſelves; or from a much worſe cauſe than either of theſe, I know not; but it happens not very infrequently that the patient, tho' perfectly undeceived, and convinced of the impoſition, concurs in propagating the deluſion, and aſſerts that he has received a cure, which he knows he has not: of this I could produce many inſtances, and ſome of thoſe among people of ſuch rank, as one would expect ſhould ſet them above ſuch diſingenuouſneſs.

I have already ſaid, that to replace the prolapſed body, or bodies, within the cavity of the belly, and to prevent their falling out again, by means of a proper bandage, is all that the art of ſurgery is capable of doing in this diſeaſe; and what I ſaid was ſtrictly true: but it muſt alſo be remembered, that nature, according to the age of the patient, the date of the diſeaſe,

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the kind of rupture, and ſome other circumſtances, is often capable (when properly aſſiſted, and not obſtructed) of doing more, and of confirming that as a perfect cure in ſome, which in others ſhe leaves imperfect, and conſtantly requiring the aſſiſtance of art; for when the portion of gut or caul, or whatever formed the tumor, is perfectly and properly replaced in the belly, and an opportunity thereby given to the aperture in the tendon to contract itſelf, and for a proper bandage to bring the ſides of the entrance of the hernial ſac as near together as it will admit, the ſurgeon has really done his part, what remains is that of nature, and whether ſhe will be capable of ſo contracting the part, as to prevent a future deſcent or not, is matter of great uncertainty; it is a circumſtance which art has very little power of aſſiſting, and which can be known only from the event.

On the contrary, all the pretenſions which have at different times been made to remedies, indued with a capacity of healing and conſolidating, the parts ſuppoſed to be broken or torn, or of conſtring-

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ing ſuch as are dilated, have all proved inefficacious and deluſive, to ſay the beſt of them; the parts concerned in this diſeaſe, and which ought to be affected by the operation of ſuch remedies, are abſolutely out of the reach of any applications or medicines whatever; the relief which ſome people have found while under ſuch proceſſes, has been from the long reſt which they have been ſubjected to, or from the ſtrict bandage which has been put upon them, either of which will in ſome caſes do a great deal; while the remedies which are either applied or taken, are made uſe of merely to deceive, and never had, or can have, any ſhare in the real cure of a rupture.

By what has been ſaid, I muſt beg not to be underſtood to mean that when the gut or caul have been once replaced, the patient can receive no farther benefit from chirurgical aſſiſtance; nor that every rupture in perſons of mature age is incapable of perfect cure; this is far from my meaning, and far from truth. There are many circumſtances attending ruptures, which will require frequent aſſiſtance, in

order to render a cure more probable, and there are many ruptures in perſons of mature age, which will admit of perfect cure if properly and judiciouſly managed from the firſt.

I only mean to contradict that poſitive aſſertion which all rupture quacks make uſe of, and which too many of mankind believe, viz. that there are medicines and applications which are ſpecific in the cure of this diſeaſe, and that they are poſſeſſed of ſuch; both of which are abſolutely falſe.

As this is a matter of ſome importance to mankind, and may poſſibly be rendered ſtill more intelligible by a few words, I beg leave to be indulged in them.

The general doctrine is, that the ruptures of infants, and of very young children, frequently admit of a perfect cure; thoſe of adults leſs frequently; and thoſe of old people ſeldom or never; all which, with certain limitations, is true.

The great and material difference between theſe, conſiſts in the ſtate of the hernial ſac, and that of the aperture in the abdominal tendon thro' which it paſſes.

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The ſac of a hernia has already been deſcribed as being an elongation or proceſs of the peritoneum, or general lining of the cavity of the belly, thruſt down before the body conſtituting the ſwelling, which body is enveloped in it as in a bag; ſomewhat reſembling what is vulgarly called a thumb-ſtall, or the finger of a glove cut off. While the hernia is recent, this bag is thin and fine, like the reſt of the membrane of which it is a portion; and being of a very dilatable nature, is eaſily enlarged according to the quantity of contents which inſinuate themſelves into it. Like ſome other parts of the body, it increaſes in thickneſs and toughneſs as it increaſes in capacity; and as it ſeldom, if ever, returns back into the belly after it has once paſſed out from it, it is by the repeated deſcents of a portion of gut, or caul, into it, gradually inlarged in ſize, and conſequently in thickneſs; inſomuch that in old ruptures which have been neglected, or deemed irreducible, or been ſuffered to remain long, or always down, it generally acquires a very conſiderable degree of toughneſs, thickneſs, and hardneſs. In thoſe ruptures which are not of the congenial kind, at

firſt it gets no lower than the groin, and while it remains there is generally ſmall and thin, but by frequent protruſions of the inteſtine or omentum, it is puſhed by degrees into the ſcrotum, and then moſt frequently acquires a pyriform kind of figure, having its broader part in the ſcrotum, and its narrow one, or neck, in the groin.

In infants, in very young ſubjects, and in recent caſes, this ſac, from its ſoft, thin ſtate, is capable of having its upper part, or neck, ſo compreſſed by means of a bandage, as either to procure a union of the ſides with each other, or at leaſt ſo to leſſen the diameter of its paſſage as to prevent the deſcent of any thing into it from the belly; this produces what is commonly called a perfect cure.

In thoſe of mature age, or whoſe ruptures are of ſome ſtanding, the entrance into the ſac is generally large, in proportion to the ſize and age of the patient, and thicker and firmer than in the former ſtate, for reaſons juſt given; in theſe, therefore, the cloſing or compreſſion of its neck, enough to hinder the falling down of any thing from the abdomen, is more dif-

ficult

ficult to accompliſh, and more unlikely to ſucceed. In very ancient people, or very old ruptures, ſucceſs is ſtill more improbable, for the ſame reaſons.

A bandage therefore, or truſs, tho' it is the only remedy, at all ages, and in all ſtates, of reducible ruptures, yet acts in a different manner, and is capable of producing very different effects, according to the circumſtances of the caſes in which it is applied: in very young perſons, a radical cure is frequently the conſequence; in the middle-aged, it often gives the tendon and mouth of the ſac ſuch opportunity of being contracted, as to produce nearly the ſame event; but as it only ſerves by the mere preſſure of the pad to keep the parts in their proper place, in very old people it can hardly ever be laid aſide, without hazard of a new deſcent, which while it is worn properly, it will almoſt always prevent.

From the foregoing ſhort account, the following facts may, I think, be collected.

1. That the principal circumſtances attending a rupture muſt be ſubject to great variety, according to the age and conſtitu-

tion of the patient, the date of the diſeaſe, &c. and conſequently that the preciſe caſe, and age, in which a radical or perfect cure is obtainable or not, is not eaſy to be determined, tho' a judicious man will moſt commonly know when it is very improbable.

2. That recent ruptures, if immediately and properly taken care of, are capable of a perfect cure, at almoſt any age.

3. That tho' the thickneſs of the hernial ſac, and the largeneſs of the abdominal aperture, are generally mentioned as the two cauſes why old ruptures do not admit of a cure, yet in fact the latter is only a conſequence of the former.

4. That all external applications in the attempt toward the cure of a rupture, muſt, if they are uſed with any deſign at all, be intended either to conſtringe the aperture thro' which the parts have deſcended, or to leſſen or contract the diameter of the neck of the hernial ſac.

5. That the conſtruction of the tendinous aperture (ſuppoſing ſuch medicines could penetrate to it) is impoſſible, while it continues dilated, by an old, thick, tough

hernial

hernial ſac, which ſac, from the connexions it always has with the cellular membrane of the ſpermatic chord, can never be returned into the belly; and therefore,

6. That ſuch medicines can be ſerviceable no other way than by rendering that ſac again thin, fine, and compreſſible; which from the nature of things, and from all experience, is abſolutely impracticable.

SECTION II.

THE different treatment which ruptures may require being dependant on different circumſtances attending the diſeaſe, I ſhall for the better information of the inexperienced reader divide them into four claſſes, under which, I think, may be comprehended not only all the kinds of hernias, but every particularity alſo with which they may happen to be diſtinguiſhed.

1. Under the firſt I reckon thoſe which are capable of eaſy and immediate reduction, and are not attended by any troubleſome or bad ſymptoms.

2. Under the ſecond thoſe which have been ſo long down, that the contained parts

are either ſo altered in form, or have contracted ſuch adheſions and connections, as to be abſolutely incapable of being reduced at all.

3. Under the third I comprehend thoſe in which ſuch ſtricture has been made on the protruded parts, as to bring on pain, and produce ſuch an obſtruction in the inteſtinal canal, as to render immediate reduction neceſſary, but at the ſame time difficult.

4. And under the fourth I ſhall place thoſe in which the return of the parts by the mere hand is abſolutely impracticable, and in which the patient's life can be ſaved only by a chirurgical operation.

The firſt is very frequently met with in infants, and ſometimes in adults, and is too often neglected in both. In the former, as the deſcent ſeldom happens but when the infant ſtrains to cry, and the gut is either eaſily put up, or returns, ſuâ ſponte, as ſoon as the child becomes quiet, it often is either totally unattended to, or an attempt made to reſtrain it only by a bandage made of cloth or dimity, and which being ineffectual for ſuch purpoſe,

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lays the foundation of future trouble and miſchief.

This is in great meaſure owing to a common opinion that a young infant cannot wear a ſteel truſs; a generally prevailing error, and which ought to be corrected. There is no age at which ſuch truſs may not be worn, or ought not to be applied; it is, when well made, and properly put on, not only perfectly ſafe and eaſy, but the only kind of bandage that can be depended upon; and as a radical cure depends greatly on the thinneſs of the hernial ſac, and its being capable of being ſo compreſſed as poſſibly to unite, and thereby intirely cloſe the paſſage from the belly, it muſt therefore appear to every one who will give himſelf the trouble of thinking on the ſubject, that the fewer times the parts have made a deſcent, and the ſmaller and finer the elongation of the peritoneum is, the greater the probability of ſuch cure muſt be.

The ſame method of acting muſt for the ſame reaſons be good in every age in which a radical cure may reaſonably be expected; that is, the prolapſed parts cannot be too ſoon returned, nor too carefully pre-

prevented from falling down again, every new descent rendering a cure both more distant and more uncertain.

As soon as the parts are returned, the truss should be immediately put on, and worn without remission, care being taken, especially if the patient be an infant, to keep the parts on which it presses constantly washed, to prevent galling.

It can hardly be necessary to say, that the surgeon should be careful to see that the truss fits, as his success and reputation depend upon such care. A truss which does not press enough is worse than none at all, as it occasions loss of time, and deceives the patient or his friends; and one which presses too much, or on an improper part, gives pain and trouble, by producing an inflammation and swelling of the spermatic chord, and sometimes of the testicle.

In adults, whose ruptures are of long standing, and accustomed to frequent ascent and descent, the hernial sac is generally firm and thick, and the aperture in the tendon of the abdominal muscle large, the freedom and ease with which the parts return into the belly, when the patient is in a su-

a ſupine poſture, and the little pain which attends a rupture of this kind, often render the perſons who labour under it careleſs; but all ſuch ſhould be informed, that they are in conſtant danger of ſuch alteration in their complaint, as may put them into great hazard, and perhaps deſtroy them. The paſſage from the belly being open, the quantity of inteſtine in the hernial ſac is always liable to be increaſed, and when down, to be bound by a ſtricture. An inflammation of that portion of the gut which is down, or ſuch obſtruction in it as may diſtend and inlarge it, may at all times produce ſuch complaints as may put the life of the patient into imminent danger, and therefore, notwithſtanding this kind of hernia may have been borne for a great length of time, without having proved either troubleſome or hazardous, yet as it is always poſſible to become ſo, and that very ſuddenly, it can never be prudent or ſafe to neglect it.

Even tho' the rupture ſhould be of the omental kind, (which conſidered abſtractedly is not ſubject to that degree or kind of danger to which the inteſtinal is liable) yet it may be ſecondarily, or by accident, the

the cauſe of all the ſame miſchief; for while it keeps the mouth of the hernial ſac open, it renders the deſcent of a piece of inteſtine always poſſible, and conſequently always likely to produce the miſchief which may proceed from thence.

They who labour under a hernia thus circumſtanced, that is, whoſe ruptures have been generally down, while they have been in an erect poſture, and which have either gone up of themſelves, or have been eaſily put up in a ſupine one, ſhould be particularly careful to have their truſs well made, and properly fitted; for the mouth of the ſac, and the opening in the tendon being both large and lax, and the parts having been uſed to deſcend thro' them, if the pad of the truſs be not placed right, and there be not a due degree of elaſticity in the ſpring, a piece of inteſtine will in ſome poſtures ſlip down behind it, and render the truſs productive of that very kind of miſchief which it ought to prevent.

It is ſcarcely credible how very ſmall an opening will ſerve for a portion of gut or caul to inſinuate themſelves into at ſome times. Now, tho' in perſons of mature age it moſt frequently proves impracticable

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ſo to compreſs the mouth of the hernial ſac, as abſolutely to cloſe it, yet by the conſtant uſe of a well made truſs, it may be ſo leſſened, as to render the deſcent of a piece of inteſtine into it much more difficult, from whence we may learn the great conſequence of having the part completely reduced before the truſs is applied, and the danger that may be incurred by laying ſuch bandage aſide after it has been worn any time, ſince the ſame alteration which renders the deſcent of the gut leſs eaſy, will alſo make the reduction more difficult, if a piece ſhould happen to get down; and hence alſo we may learn why the bandage ſhould be long and unremittingly worn by all thoſe whoſe time of life makes the expectations of a perfect cure reaſonable, many of the ruptures of adults being owing to the negligent manner in which children at ſchool are ſuffered to wear their truſſes.

I know a gentleman who has for ſome years had an omental rupture, which was neglected while he was young, and he having naturally a lax habit, and the abdominal opening being much dilated, he finds it extremely difficult to keep it up, even

even with the beſt truſs he can get, behind which it will ſometimes ſlip down: when this happens, it gives him ſuch immediate and acute pain at his ſtomach, and makes him ſo intolerably ſick, that he is obliged immediately to throw himſelf on his back, and procure the return of the piece of omentum.

SECTION III.

IN the ſecond claſs I ranked thoſe caſes in which the parts conſtituting the hernia are found irreducible, but not in a ſtate of inflammation, nor producing any troubleſome or dangerous kind of ſymptoms.

This incapacity of reduction may be owing to ſeveral cauſes, but moſt frequently ariſes either from the largeneſs of the quantity of the contents; from an alteration made in their form and texture; or from connections and adheſions which they have contracted with each other, or with their containing bag.

I have already mentioned it as my opinion, that ruptures are ſometimes rendered difficult

difficult to be reduced by that portion of the inteſtinal canal which is called the cœcum, or the beginning of the colon, being contained in the hernial ſac. Of which fact I am as much convinced as the nature of ſuch kind of things will permit; that is, by obſervations made both on the living and the dead.

When a hernia of this kind (viz. one containing ſuch a part of the inteſtinal tube) has been long neglected, and ſuffered to remain in the ſcrotum without any bandage at all to ſupport its weight, the hernial ſac being conſtantly dragged down, and kept in a ſtate of diſtention, neceſſarily becomes thick, hard, and tough; by this means the diameter of its neck is leſſened, and the return of the inteſtine back from the ſcrotum into the belly rendered more and more difficult, as the parts thro' which it is to paſs become harder, and leſs capable of yielding. This will, indeed, in time prove an obſtruction ſufficient to hinder any part of the inteſtine, or even the omentum, from being returned; but the more the difficulty is, which proceeds from the mere figure and ſize of the portion of gut, the greater will be the obſtruction when

when added to that arising from the just mentioned cause.

An alteration produced by time, and constant, tho' gentle, pressure in the form, and consistence, or texture of the omentum, is also no infrequent cause, why neglected omental ruptures become irreducible.

The cellular membrane in all parts of the body, however loose and light its natural texture may be, is capable of becoming hard, firm, and compact, by constant pressure. Of this there are so many, and so well known instances, that it is quite unnecessary to produce any.

The omentum, from its texture, is liable to the same consequence. When a portion of it has been suffered to remain for a great length of time in the scrotum, without having ever been returned into the belly, it often happens that although that part of it which is in the lower part of the hernial sac preserves its natural soft, adipose, expansile state, yet all that part which passes thro' what is called the neck of the sac, is, by constant pressure, formed into a hard, firm, incompressible, carnous kind of body, incapable of being expanded, and taking the form of the passage in which

which it is confined, exactly filling the paſſage, and rendering it impoſſible to puſh up the looſe part which fills the ſcrotum.

This is no theoretic opinion, but a fact, which I have ſeen and proved often; and whoever will reflect on it, will immediately ſee in it one inſuperable objection to the return of ſome old omental ruptures.

The ſame reaſon for incapacity of reduction, is alſo ſometimes met with in ruptures of the inteſtinal kind, from an alteration produced on that part of the meſentery which has been ſuffered to lie quiet for a great length of time in the neck of an old hernial ſac.

The other impediment, which I mentioned, to the return of old ruptures, is connection and adheſion of the parts, either with each other, or with the bag containing them. This is common to both the inteſtinal and omental hernia, and is produced by ſlight inflammations of the parts, which have been permitted to lie long in contact with each other, or perhaps in many caſes from the mere contact only. Theſe adheſions are more or leſs firm in different caſes, but even the ſlighteſt will almoſt always be found an invinci-

ble objection to the reduction of the adherent parts, by the hand only.

Many, or perhaps moſt of theſe irreducible ruptures become ſo by mere time and neglect, and might at firſt have been returned; but when they are got into this ſtate, they are capable of no relief from ſurgery but the application of a ſuſpenſory bag, to take off or leſſen the [h] inconvenience ariſing from the weight of the ſcrotum.

People in this ſituation ſhould be particularly careful not to make any attempts beyond their ſtrength, nor aim at feats of agility; they ſhould take care to ſuſpend the loaded ſcrotum, and to keep it out of the way of all harm from preſſure, bruiſe, &c.

[h] I am not unaware that moſt of theſe are capable of being cured by the operation for the bubonocele, as it is called; but as I ſhould never think of propoſing it in any caſe in which there are not ſymptoms that threaten the life of the patient, ſo I have not mentioned it in this place as a means of cure. I alſo am not unapprized what influence a ſucceſsful operation or two of this ſort has had on the unknowing, among both the great vulgar and the ſmall, but I alſo know that ſuch accidental ſucceſſes have emboldened the ſame operators to commit more than one or two murders, in ſimilar caſes; and that, from the prevalence of faſhion, ſome of theſe rupture-doctors have been largely rewarded, when they ought to have been hanged.

&c. When the tumor is very large, a ſoft quilted bolſter ſhould be worn at the bottom of the ſuſpenſory to prevent excoriation, and the ſcrotum ſhould be frequently waſhed for the ſame reaſon; a loſs of ſkin in this part, and in ſuch circumſtances, being ſometimes of the utmoſt importance. They ought alſo to be particularly attentive to the office of the inteſtinal canal, to ſee that they do not by any irregularity of diet diſorder it, and keep themſelves from being coſtive, for reaſons too obvious to need relating. By theſe means, and with theſe cautions, many people have paſſed their lives for many years free from diſeaſe, or complaint, with very large irreducible ruptures.

On the other hand, it is fit that mankind ſhould be appriſed that the quiet, inoffenſive ſtate of this kind of hernia is by no means to be depended upon, many things may happen to it, by which it may be ſo altered, as to become hazardous, and even fatal; an inflammation of that part of the gut which is down, any obſtruction to the paſſage of the aliment or fæces thro' it, a ſtricture made by the abdominal tendon, either on what has been long down,

or on a new portion which may at any time be added to it, are always capable of so altering the state of the case, as to put the life of the patient into danger.

Indeed the hazard arising from a stricture made on a piece of intestine contained in the sac of an old irreducible hernia, is in one respect greater than that attending one that has been found at times reducible; since from the nature of the case it will hardly admit of any attempt toward relief, but the operation, and that in these circumstances must necessarily be accompanied with additional difficulty [1].

Among

[1] I was some time ago desired to be present at the opening of the dead body of a man who had for many years laboured under a large irreducible hernia, but which had never given him any other trouble than what proceeded from its weight, and who died very old: my then state of health would not permit me to go, but I desired leave to send a very ingenious young gentleman, Mr. Price, who was then my pupil at St. Bartholomews, and is now settled in Wales. The following is the account he gave me.

"The hernia was of fourteen years standing, during "which time no attempt had ever been made for its re-"duction; it was on the right side, and distended the "scrotum to such a size, that it measured, from the "opening in the abdominal muscle, to the bottom of the "tumor, fourteen inches and a half, and round the tu-

"mor

Among the ruptures which have been thought not reducible, and treated as such, there have been some which upon more judicious and more patient attempts, have been found capable of reduction.

When this is suspected to be the case, the proper method is by absolute rest, in a supine posture, for a considerable length of time, by great abstinence, and the use of evacuants, so to lessen the size of the parts in the hernial sac as to render them capable of passing back again into the belly.

This method has now and then succeeded, and in some cases is worth the trying; but

" mor twenty-two inches; the ring, as it is called, was " very large, and had no appearance of stricture; the sac " was not so thick as might have been expected, and " contained no water; the jejunum, ileum, the sac of the " colon, called the cœcum, with its appendicula vermi- " formis, together with a large portion of omentum, " were the contents; the duodenum was so displaced by " the weight of the rest of the guts within the sac, that " its direction from the pylorus was perpendicular; the " caul adhered to the hernial sac in several places, the " intesting in none; the testicle, included in its tunica " vaginalis, was much wasted; the spermatic artery and " vein ran down behind the hernial sac, but the vas de- " ferens ran up on the inner and left side of it, at a great " distance from them, thro' the whole of its course, but " nevertheless would not have been in the way of the " operation had it been necessary."

but previous to the attempt, there ſhould be ſome circumſtance which makes the ſucceſs probable, and there ſhould alſo be good reaſon to believe that the habit and age of the patient will bear the neceſſary confinement and evacuation, otherwiſe, even tho' he ſhould get rid of his rupture, he may be much worſted by the experiment [k].

If ſuch attempt ſucceeds, a truſs ſhould be immediately put on, and worn conſtantly, without remiſſion; for in theſe people, the largeneſs of the abdominal aperture, the thickneſs of the hernial ſac, and the relaxation of the meſentery, make a new deſcent always to be apprehended and guarded againſt.

An omental rupture which has been ſo long in the ſcrotum as to have become irreducible, is very ſeldom attended [l] with any bad ſymptoms, conſidered abſtractedly; but, as I have already ſaid, it is conſtantly capable of being the occaſion of an inteſtinal

[k] Hildanus gives an account of a man radically cured by ſix months confinement to bed, in the caſe of a rupture of twenty years date.

[l] Garengeot relates the caſe of an epiplocele producing very bad ſymptoms; and ſo does Dionis.

inteſtinal hernia, and all its conſequences; neither is that all, for the omentum, either ſo altered in form and texture, or ſo connected, as to be incapable of reduction, may by accident inflame, and either become gangrenous or ſuppurate, and be the occaſion of a great deal of trouble. Of this I have ſeen two or three inſtances, one of which I will relate.

I was deſired to ſee a gentleman, from whoſe ſcrotum near a pint of brown, ſanious, fœtid fluid had been diſcharged two or three days before. The account he gave of himſelf was as follows; that he had been from his youth ſubject to the deſcent of a ſoft, flabby body into the ſcrotum, when he was in an erect poſture, but which for many years he could put up when he pleaſed, and which always went up when he lay down; that having no trouble from it, and being naturally ſhy and baſhful, he had done nothing to it, nor ever ſhewed it to any one; that from the ſudden ſpring of an unruly horſe, he had ſtruck it with great violence againſt the pummel of his ſaddle, which had given him great immediate pain; that the next day it ſwelled ſtill more, and became more painful, but

that being afraid, or aſhamed, he ſtill concealed it, and only anointed it with ſomething greaſy, till at laſt he could bear it no longer; the perſon to whom he ſhewed it took it for a hydrocele, tapped it, and let out the fluid juſt mentioned, and on the fifth or ſixth day from this operation I ſaw it.

The whole ſcrotum was much inflamed, and the orifice made by the trocar foul and ſloughy; he had a degree of heat and fever upon him, which forbad any operation at that time, and therefore I deſired that he might be dreſſed ſoft and eaſy, have an emollient cataplaſm applied to the whole ſcrotum, loſe ſome blood, and have a glyſter.

By proper care the tumor ſubſided, his fever left him, and the ſlough caſting off largely, brought the putrid omentum within view; upon ſight of which I would have laid the whole open, but was not permitted; I enlarged the orifice a little, and in ſo doing, cut through an old hernial ſac, which was very thick and hard; what part of the omentum was looſe I brought away with a pair of forceps, but the ſeparation of the whole took up much time,

time, and the hard hernial ſac cauſed ſo many abſceſſes, and occaſioned ſo large a diſcharge, that being a valetudinarian, he had certainly ſunk under it, had it not been for the free uſe of the bark.

If, inſtead of this method of treating it, I had been permitted to have laid it open, thro' the whole of its length, removed the rotten omentum, and cut off ſome part of the ſides of the hernial ſac, the cure would have been ſhortened, and the ſcrotum would have been left in a much better ſtate.

That an omental rupture, which has ſo long reſiſted all attempts for reduction, as to create a belief of its being abſolutely irreducible, may now and then, by long reſt and abſtinence, become capable of being returned, I am under no doubt, for reaſons which have already been mentioned; and not long ago, I had myſelf a patient in St. Bartholomew's hoſpital, who underwent the operation for the radical cure of a hydrocele, who had alſo an omental hernia, which I and ſome others had often tried ineffectually to reduce; this, during the time of his confinement to bed, after the operation, went up of its own accord, and was ever afterwards kept there by a truſs.

It

It ſometimes happens in old compound ruptures that the piece of inteſtine is reducible, and that of the omentum is not; in which caſe we are told, that the portion of inteſtine ſhould be kept up by a truſs, whoſe pad may be ſo made, as not to preſs on the omentum while it reſtrains the inteſtine.

I will not deny that this may now and then be practicable, but it is not often ſo, and it ought to be particularly attended to, and very carefully watched, leſt a ſmall piece of gut ſlip down, and being preſſed on by the truſs, produce fatal miſchief.

I have ſeen an omental rupture, in which the piece included in the ſac had the knotty hardneſs, the pain, and every other ſymptom of a cancer.

SECTION IV.

UNDER the third diviſion I reckon thoſe ruptures which are reducible, but whoſe reduction is difficult, and which are attended with pain and trouble and hazard.

Difficulty

Difficulty of reduction may be owing to ſeveral cauſes. The ſize of the piece of omentum, or the inflamed ſtate of it; the quantity of inteſtine and meſentery, an inflammation of the gut, or its diſtention by fæces or wind; or the ſmallneſs of the aperture of the tendon through which the hernia paſſes. But to whatever cauſe it be owing, if the prolapſed body cannot be immediately replaced, and the patient ſuffers pain, or is prevented thereby from going to ſtool, it is called an incarcerated hernia, a ſtrangulated hernia, or a hernia with ſtricture.

The ſymptoms are a ſwelling in the groin or ſcrotum reſiſting the impreſſion of the fingers; if the hernia be of the inteſtinal kind, it is generally painful to the touch, and the pain is increaſed by coughing, ſneezing, or ſtanding upright: theſe are the very firſt ſymptoms, and if they are not relieved, are ſoon followed by others, viz. a ſickneſs at the ſtomach, a frequent reaching, or inclination to vomit, a ſtoppage of all diſcharge per anum, attended with a frequent, hard pulſe, and ſome degree of fever.

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A patient in these circumstances may be looked upon as in some danger, and requiring immediate assistance. A stricture made on the prolapsed part of the gut, by the borders of the natural aperture in the tendon of the oblique muscle, is the immediate cause of these symptoms, which nothing can appease or remove, except what will take off that stricture. The two methods of accomplishing this end are, by removing the part so bound from the tendinous opening; by returning it back into the belly, whence it came; or by dividing a part of the tendon itself: the former of these, when it can be practised, is always most eligible, and makes our present subject.

I have already observed, that a portion of intestine, while it is neither bound by any degree of stricture, nor affected by inflammation, will remain quiet in a hernial sac in the scrotum, and perform its proper office freely and perfectly; but the instant either of the above-mentioned accidents (particularly the former) happens, the case is altered; the passage both of the aliment and fæces is stopped or interrupted; the peristaltic motion of the whole canal is

disturbed or perverted, and the circulation of the blood, thro' the straitened portion of intestine, is so impeded, that if the obstruction be not removed in time, a mortification must follow.

Every symptom which attends an incarcerated rupture depends on this cause, and is justly accountable for from it. The tumor, the pain, the tension of the belly, the nausea, the vomiting, and the suppression of stools, are so many effects produced by this one cause, and removable only by removing it.

My present consideration being those ruptures which are capable of being returned, I am now to speak of the manner of attempting such reduction.

The patient should be laid in a supine posture, with his trunk certainly as low, if not lower than his thighs; the thigh on the diseased side should be so elevated, as to contribute as much as possible to the relaxation of the abdominal aperture, and then the surgeon, grasping the lower part of the tumor gently with his hand in such a manner as to keep the testicle from ascending, and the intestine from descending, must endeavour to procure the return of the

the latter thro' the ring, as it is vulgarly called, by gentle continued preſſure toward that opening. If the caſe be a bubonocele, there will be no occaſion for endeavouring to graſp the tumor, but by continued, moderate preſſure on it with the fingers, to endeavour the return of the piece of gut.

This may ſerve for a general deſcription of the method of performing this operation; but the exact manner of executing it is one of thoſe manœuvres which can be learnt only by obſervation and practice, and of which no verbal deſcription can convey an adequate and perfect idea: knowledge of the ſtructure, and ſituation of the parts, will inſtruct any one how to go about it, and a little practice will ſoon make him adroit.

The poſture of the body, and the diſpoſition of the lower limbs, may be made very aſſiſtant in this operation, when the difficulty is conſiderable; the nearer the poſture approaches to what is commonly called ſtanding on the head the better, as it cauſes the whole packet of ſmall inteſtines to hang, as it were, by the ſtrangulated portion, and may thereby diſengage it.

it. A little time and pains ſpent in this manner will frequently be attended with ſucceſs, and obtain a return of the part; but if it ſhould not, and the handling of it (which, I muſt repeat, ſhould always be gentle) becomes painful, and very fatiguing to the patient, we are adviſed to deſiſt a few hours, and try the effect of other means.

Theſe means are phlebotomy, glyſters, cathartics, the application of cataplaſms, fomentations, embrocations, &c.

Children, eſpecially very young ones, bear the loſs of blood very ill, and are very apt to ſwoon, if the quantity be at all conſiderable; if therefore ſuch accident happens, the ſurgeon ſhould embrace the opportunity which ſuch general relaxation will afford him of reducing the rupture, eſpecially as it gives him another advantage by preventing the child from crying, and making reſiſtance.

Perhaps there is no diſeaſe affecting the human body in which bleeding is found more eminently and immediately ſerviceable than in this, and which therefore, if there are no particular circumſtances in the conſtitution prohibiting it, ought never to be

be omitted; but, on the contrary, ſhould be freely and largely repeated, if it appears at all neceſſary.

A ſemicupium, or warm bath, will, by the general relaxation which it neceſſarily produces, be found frequently ſerviceable.

The uſe of warm fomentations, ſoft cataplaſms, and relaxing oily embrocations, are alſo adviſed, with a view to relax the tendon of the abdominal muſcle, and to render the return of the parts contained in the hernial ſac eaſy; but I am afraid that ſuch kind of applications have in general been the occaſion of much more miſchief than good. The effect of them can hardly reach beyond the ſkin and membrana cellularis, and may poſſibly, by relaxing them, take off ſome ſmall part of the pain which ariſes from their diſtention, but will ſeldom have any effect on the immediate ſeat of the diſeaſe, the tendon of the oblique muſcle; the enlargement or relaxation of which only can be of material ſervice.

I know that in this I differ from the majority both of writers and practitioners, but having (as I think) truth on my ſide, I do again venture to ſay, that I verily believe, that the confidence which has been placed

placed in ſuch kind of applications has deſtroyed many more lives than it has ſaved. A hernia, with painful ſtricture, and ſtoppage of ſtools, is one of thoſe caſes, in which we can ſeldom ſtand ſtill, even for a ſhort ſpace of time; if we do not get forward, we generally go backward; and whatever does no good, if it be at all depended upon, certainly does harm, by occaſioning an irretrievable loſs of time: of this kind I take the cataplaſm and embrocation[m] to be; while the former is applied, or the latter uſed, no other more powerful means are made uſe of; and though it has all the appearance of doing ſomething, yet I fear it is little more than ſpecious trifling; eſpecially if the caſe be at all preſſing.

Very different have been the opinions of different people concerning the uſe of catharthic medicines; ſome adviſing them ſtrenuouſly, others making no dependance on

[m] In a very pompous modern book may be ſeen an operoſe, expenſive proceſs, for making an ointment, of a ſolution of gold, pearl, &c. to be uſed for aſſiſting the reduction of ſtrangulated inteſtines, and which, when properly made, may poſſibly be as uſeful as pomatum, ointment of elder, or any other greaſy application.

on them at all. As different alſo have been the opinions of thoſe who do adviſe them with regard to the kind of medicine proper on this occaſion; ſome preſcribing thoſe of the lenient kind, ſuch as Glauber's ſalt, infuſum ſenæ, &c. others the more powerful or ponderous kind of remedies, ſuch as Extract. Cathart. Jallap, Mercurius Dulcis[n], &c.

I believe I may venture to ſay that I have tried them all, but I cannot ſay that I have ſuch faith in any of them as to think very highly of them. With regard to the former, viz. the lenient ſort of purges, it is not often that a patient in theſe circumſtances can keep them upon his ſtomach; and even when they are not rejected by vomit, they very ſeldom have force ſufficient to anſwer the end propoſed. The more ſtimulating ones are certainly better calculated to excite the periſtaltic motion of the inteſtines (the one thing to be aimed at) and

[n] The ingenious and learned Dr. Monro of Edinburgh, ſays, that he has more than once reduced a rupture of this kind by a ſmart doze of jallap and mercurius dulcis, when other methods have failed. The ſame gentleman ſays he has ſeen the external application of cold claret, or ſnow, inſtead of a warm poultice, uſed with good ſucceſs.

and thereby free the confined piece; but, on the other hand, if they do not succeed, they add to the fullneſs and tenſion of the belly, as well as to the heat and thirſt.

I would by no means be underſtood to mean that I am abſolutely againſt the uſe of cathartic medicines; I only mean to ſignify, that I have no great dependance on them, and that I think perſiſting in the ineffectual uſe of them often adds unneceſſarily to the ſuffering of the patient.

But tho' I cannot ſay that I have ſeen frequent benefit from the exhibition of cathartics by the mouth, yet I have often experienced the good ariſing from acrid, ſtimulating glyſters, and ſuppoſitories frequently repeated °; particularly from the ſmoke of tobacco, and from a compoſition of ſalt, honey, and aloes, boiled to the proper conſiſtence of a ſuppoſitory. By theſe I have ſeen very alarming ruptures returned, when they have been thought capable of being relieved by nothing but the chirurgical operation.

There

° I cannot help thinking that the preſent machine, which is uſed for the tobacco glyſter, might be conſiderably improved, that is, might be made to throw in the fume in much greater quantity, and with more certainty.

There is another method of endeavouring to obtain relief in this caſe, which has been propoſed by few, and I hope practiſed by fewer (though I have ſeen two patients upon whom it had been tried, and who were both deſtroyed by it). It is the making ſeveral punctures with a round needle through the tumid ſcrotum into the gut, in order (as it is ſaid) to let out the air which is ſuppoſed to diſtend the latter, and prevent its return; if this practice was worth a ſerious refutation, many arguments, drawn from the nature both of the parts and of the diſeaſe, might be produced againſt it; but it is really too abſurd to waſte either my own or the reader's time about it.

There is no circumſtance attending ruptures with ſtricture, in which more variety is found, than in the time which they will ſafely admit to be ſpent in their reduction; ſome have been ſucceſsfully replaced at the end of eight or ten days, others have proved fatal in one. This difference may proceed from difference of conſtitution and habit, or from ſome particular circumſtance in the diſeaſe itſelf; but let the cauſe of it be what it may, as it never can be abſolutely

lutely foreſeen, it ſhould never be truſted; the ſooner a rupture is reduced, the ſooner the patient is out of danger from the ſtricture, and the ſooner will he be rid of thoſe ſymptoms, which it has already occaſioned.

Recent hernias are in general more liable to ſtricture than old ones, for reaſons which are obvious from what has already been ſaid; but when old ones get into the ſame circumſtances, the ſymptoms are much the ſame; tho' I think in general they are not altogether ſo preſſing, and the latter generally admit of more time to attempt reduction in. The ſmaller the portion of inteſtine is which is engaged, the greater the pain is, and the more haſtily do the ſymptoms advance. I have ſeen a bubonocele in a young woman prove fatal in leſs than a day, which had never been down before, and in which the portion of inteſtine was ſo ſmall, as hardly to engage its whole canal.

Omental ruptures in general are not ſubject to bad ſymptoms ariſing from ſtricture, tho' they will ſometimes be painful, and troubleſome, from the connexion of the caul with the viſcera, as I have often

ſeen. As this is an accident which they are all liable to, they ſhould never be ſuffered to remain down, if they are reducible, and that not only on this account, but alſo becauſe they render the patient always liable to the deſcent of a piece of gut. In general they are more eaſy of reduction than the inteſtinal, and being not painful will admit of more free handling, as well as more time to be ſpent in the attempt[p].

I have already mentioned the reaſons why an omental rupture is ſometimes incapable of being reduced, viz. adheſion to the ſides of the hernial ſac, or ſuch an alteration in the form of it, as makes it impoſſible for it to paſs thro' the abdominal aperture. When this is truly the caſe, as is moſt reaſonable to ſuppoſe, when it reſiſts all proper attempts, there is no remedy but to ſuſpend the weight of it in a bag-truſs, and thereby render it as little troubleſome as poſſible. This is indeed all that can be done when the rupture is abſolutely

[p] Writers of good credit have given accounts of the worſt ſymptoms from a mere epiplocele; in Dionis may be ſeen a caſe of this kind, in Garengeot, and others.

ſolutely irreducible; but in books will be found direction to leave an old omental hernia down, and ſuſpend it in a bag, even tho' it ſhould be reducible, rather than return it into the belly, leſt it ſhould lie there in a lump, and make the patient uneaſy. This is one of thoſe maxims which writers receive from each other, and deliver down to poſterity, without inquiring into their propriety. It may in ſome few particular caſes be right to do ſo, but cannot be admitted as a general rule; ſurely it muſt always be worth while to try how it will be when it is up, rather than be content with a method, which is hardly palliative, and which always may be productive of new evil.

When the parts are fairly reduced, the next conſideration is how to keep them from falling down again; this can only be done by a bandage, the pad of which muſt make a conſtant preſſure againſt the opening in the abdominal tendon, and thereby not only keep the gut, or caul, from puſhing out, but make the ſides of the hernial ſac approach each other as near as poſſible.

In the making and adjuſting this kind of bandage, ſome ingenuity is neceſſary; if it be not ſo made, and ſo put on, as to do good, it will do harm; if it does not keep the inteſtine up, the patient is much more liable to miſchief with it than without it, and it has often, by preſſing on the rupture while down, proved very pernicious in caſes where there has been no degree of ſtricture from the tendon: it therefore behoves every ſurgeon to ſee that the truſs which he orders is well made, and properly applied, leſt all his pains ſhould be baffled by the bad make, or injudicious application of this piece of machinery.

If the ſymptoms of pain, inflammation, &c. ran high before the parts were reduced, they will not always ceaſe immediately after; and as the ſymptoms which remain after the gut is returned, do in all probability proceed from its having been inflamed by the ſtricture, ſuch remedies as are proper in that caſe ought to be made uſe of; the body ſhould be kept open, and the diet and regimen ſhould be low and ſparing, while the leaſt degree of tenſion or pain remain; in ſhort, till all complaint

is abſolutely removed from the abdomen, and the inteſtines do their office freely, and without trouble.

SECTION V.

I AM now come to the fourth diviſion, under which I comprehended all thoſe ruptures, which are in ſuch a ſtate as to be irreducible by the mere hand, and in which a chirurgical operation is neceſſary for the preſervation of the life of the patient.

Impracticability of reduction may be owing to many cauſes, moſt of which have already been recited; ſuch are, alteration of the form of the parts contained in the hernial ſac, largeneſs of their quantity, adheſions either to the ſac, or to each other, or both, and a ſtricture made on the inteſtine, by the borders of the aperture in the abdominal tendon: theſe are each of them cauſes why ruptures are ſometimes incapable of being returned back into the belly, and will require our conſideration in their proper places; but in this it is my intention to ſpeak only of the laſt, it being that

that which calls moſt immediately for relief, and which moſt frequently requires the ſurgeon's knife.

Whether the primary and original cauſe of the miſchief ariſing from this ſtricture, is in the contained, or the containing parts of a rupture, I will not now ſtay to inquire; nor whether the ſtricture made by the tendon be a cauſe, or an effect; but ſhall conſider the inteſtine as ſo engaged in it, as to be rendered incapable of being returned into the cavity of the belly (by the hand only) and ſuffering in ſuch manner, by being ſo bound, as to produce a ſeries of bad ſymptoms, and at laſt, (if not relieved) death.

This ſtricture, which according to its different degrees renders the reduction of an inteſtinal hernia either difficult or impoſſible, is according to ſuch degrees productive of what are called the ſymptoms of a ſtrangulated rupture, and which are more or leſs preſſing, as they more or leſs intereſt the life of the patient.

The earlieſt of theſe ſymptoms were related in the former ſection, as attendant on thoſe ruptures which were reducible, tho'

with

with difficulty, viz. tumor in the groin, or ſcrotum, attended with pain, not only in the part, but all over the belly, and creating a ſickneſs and inclination to vomit, ſuppreſſion of ſtools, and ſome degree of fever: theſe are the firſt ſymptoms, and if they are not appeaſed by the return of the inteſtine, that is, if the attempts made for this purpoſe do not ſucceed, they are ſoon exaſperated; the ſickneſs becomes more troubleſome, the vomiting more frequent, the pain more intenſe, the tenſion of the belly greater, the fever higher, and a general reſtleſsneſs comes on, which is very terrible to bear. When this is the ſtate of the patient, no time is to be loſt, a very little delay is now of the utmoſt conſequence, and if the one ſingle remedy which the diſeaſe is now capable of, be not adminiſtered immediately, it will generally baffle every other attempt. This remedy is the operation, whereby the parts engaged in the ſtricture may be ſet free. If this be not now performed, the vomiting is ſoon exchanged for a convulſive hiccough, and a frequent gulping up of bilious matter; the tenſion of the belly, the reſtleſsneſs, and fever, having been conſiderably

derably increaſed for a few hours, the patient ſuddenly becomes perfectly eaſy, the belly ſubſides, the pulſe from having been hard, full, and frequent, becomes low, languid, and generally interrupted; and the ſkin, eſpecially that of the limbs, cold and moiſt; the eyes have now a languor and a glaſſineſs, a lack-luſtre not eaſy to be deſcribed; the tumor of the part diſappears, and the ſkin covering it ſometimes changes its natural colour for a livid hue; but whether it keeps or loſes its colour, it has an emphyſematous feel, a crepitus to the touch, which will eaſily be conceived by all who have attended to it, but is not ſo eaſy to convey an idea of by words: this crepitus is the too ſure indicator of gangrenous miſchief within. In this ſtate, the gut either goes up ſpontaneouſly, or is returned with the ſmalleſt degree of preſſure, a diſcharge is made by ſtool, and the patient is generally much pleaſed at the eaſe he finds; but this pleaſure is of ſhort duration, for the hiccough and the cold ſweats continuing and increaſing, with the addition of ſpaſmodic rigors and ſubſultus tendinum, the tragedy ſoon finiſhes.

Theſe

Theſe are the ſymptoms of an *incarcerated hernia*, this their general progreſs, and their too frequent event. The firſt claſs of them imply ſome degree of hazard, but are often capable of being relieved, without the uſe of the knife; the latter frequently require it, and very often prove fatal by the neglect, or late application of it.

Perhaps there is not in the practice of ſurgery a point which requires more judgment, firmneſs, or delicacy, than to determine the preciſe time, beyond which this operation ſhould not be deferred, and for a ſurgeon to conduct himſelf ſo as to induce a patient to ſubmit to it early enough for his preſervation. The time in which a piece of gut will become gangrenous from ſtricture, or get into a ſtate approaching to that of a gangrene, is extremely uncertain, and depends on circumſtances which no man can foreſee. There have been ſeveral inſtances of ruptures, attended by preſſing ſymptoms of ſtricture, which have been ſafely returned, by the hand only, at the end of ſeveral days; or the operation having been performed at the

ſame

ſame diſtance of time, the parts have been found ſound and unhurt; on the other hand, there are many inſtances producible, of the inteſtine having been with great difficulty replaced, or of its returning, ſuâ ſponte, from being mortified, or (the operation having been ſubmitted to) of its having been found in ſuch ſtate by the operator, at the end of not many hours.

I have myſelf ſeen a ſmall portion of the inteſtine become perfectly gangrenous, in one day and night from its firſt expulſion.

The directions which are given to us by writers, are not to be truſted without much circumſpection; the ſigns or marks, which they in general regard as proofs of the proper time for operating, are moſt frequently proofs that that time is juſt elapſed, and that inſtead of waiting for the arrival of ſuch ſymptoms, we ſhould have prevented them. On the other hand, to propoſe an operation of ſo much conſequence before it ſhall be thought abſolutely neceſſary, may admit of ſuch miſconſtruction, as no man would wiſh to have put upon his conduct. Indeed I do not know any ſituation,

ſituation, in which a judicious and prudent man can be put, in which it will behove him to be more wary and circumſpect, more delicate, or more firm.

The two principal circumſtances, which have moſt contributed to the infrequency of performing this operation, are, a dread of great hazard from the operation itſelf, conſidered abſtractedly, and a fear of bringing a diſgrace upon it, by having performed it too late, *ne occidiſſe, niſi ſervaſſet, videretur*[p]. The firſt of theſe is vaſtly greater than it ought to be, and is moſt frequently the cauſe of the latter; ſo that if the one can juſtly be leſſened, the other will not be ſo likely to happen.

That the operation conſidered ſimply is not void of hazard, every man who knows any thing of the nature of wounds in membranous and tendinous parts, muſt acknowledge; they are certainly ſubject to fever and inflammation, are difficult and ſlow of digeſtion, and in ſome particular habits are apt to become gangrenous; but that they are neceſſarily, or even moſt frequently hazardous, daily and manifold experience contradicts.

One

[p] Celſus,

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One evil is frequently the parent of others. By being afraid of incurring that degree of hazard which is thought to attend the operation merely, the generality of people neither attend to, nor embrace the moſt proper time for the ſafe performance of it; or that in which its danger muſt be neceſſarily leaſt, becauſe leaſt combined with that which may ariſe from the ſtate of the parts within; a ſtate even at firſt not abſolutely ſafe, but which all delay beyond a certain time muſt hourly increaſe the hazard of.

If I might preſume to give my opinion on this ſubject, I ſhould ſay that the operation ought always to be performed as ſoon as poſſible after it appears, that all rational attempts, by large and free bleeding, the warm-bath, glyſters, &c. are found to be ineffectual, or that the ſymptoms rather increaſe than decreaſe, while ſuch means are made uſe of, and that the [q] handling neceſſary for reduction becomes more

[q] Perhaps I may be thought ſomewhat ſingular, but from what I have ſeen I am much inclined to believe, that when the parts are very painful to the touch, and the

more and more painful; for if it be delayed until the inflammation has attained a certain height, tho' the parts upon being laid open, are not found quite gangrenous, that is no proof that the want of ſucceſs muſt be ſet to the account of the operation merely. That ſtate of inflammation, either of the inteſtine, or of the hernial ſac, which is juſt not gangrenous, is no ſtate of ſafety,

ſcrotum large, and much upon the ſtreſs, more harm is generally done by the manual attempts for reduction than good. In this ſtate, the great diſtention of the inteſtine renders it very incompreſſible, and very little likely to be returned thro' the tendinous aperture by mere force, (for ſuch it is, in whatever degree it be uſed) and either a briſk irritating purge, or a very ſtimulating glyſter, (particularly the tobacco-ſmoke) are more likely, by exciting the periſtaltic motion, to diſentangle it, than even the moſt judicious method of handling it. And in caſes, where ſuch remedies have been previouſly uſed, I verily believe the ſudden reduction of the piece of gut is often more owing to their effect than to that of the hand. But I muſt deſire that this may be rightly underſtood, and not miſtaken for a diſſuaſive againſt manual attempts for reduction; I only mean, that there is ſuch a ſtate of an incarcerated inteſtine, (which ſtate I have juſt deſcribed) in which, from its ſize, inflammation, diſtention, &c. compreſſion by the hand is very little likely to procure its return, and very likely, if it does not do ſo, to do conſiderable miſchief.

ſafety, nor are we ſure that removing the ſtricture will at this time appeaſe the ſymptoms, or abate the hazard,—far from it; ſuch an alteration may have already been made in the inteſtine that a mortification will enſue, tho' it be ſet free and returned into the belly; a ligature need not be continued round any part of a living animal, until it becomes quite gangrenous, in order to produce its deſtruction; there is a certain point of time, in which the circulation is ſo prevented, that the ſame event will follow, tho' the ligature be then removed. It is indeed a nice, and no very eaſy matter to find this preciſe time; but this difficulty and uncertainty are the ſtrongeſt reaſons for anticipating rather than waiting for it; for when in the preſent caſe ſuch time arrives, or is nearly arrived, the riſque of the operation becomes complicated with that ariſing from the diſeaſed ſtate of the parts within, and the chance of ſucceſs is thereby much leſſened.

A mortification of the inteſtine is not abſolutely, neceſſarily, and always fatal; but

but the inſtances of thoſe patients who have eſcaped with life in theſe circumſtances are ſo very few, that it may fairly be reckoned among the deadly diſeaſes. If the mortified gut returns back into the belly, upon the gangrene taking poſſeſſion of the parts which bound it, certain deſtruction enſues; and tho' there have undoubtedly been inſtances of people who have ſurvived the operation, though it has been delayed till the parts have been in ſuch condition, yet they are ſo very rare, that they are hardly ſufficient to found a reaſonable expectation upon, and of the very few who have thus eſcaped, the majority have been obliged to hold life upon terms which have been very fatiguing and diſagreeable.

When the operation ſhall be thought neceſſary, the manner of performing it is as follows:

The pubes, and groin, having been clean ſhaved, the patient muſt be laid on his back, on a table of convenient height, with his legs hanging eaſily over the end of it, then with a ſtrait diſſecting knife, an inciſion muſt be made through the ſkin, and

membrana adipoſa, beginning juſt above the place where the inteſtine paſſes out from the belly, and continuing it quite down to the lower part of the ſcrotum. Upon dividing the adipoſe membrane, there generally appear a few ſmall, diſtinct, tendinous kind of bands, which lie cloſe upon the hernial ſac, which muſt be divided alſo, as well as the ſac; the ſame knife with which the inciſion thro' the ſkin was made will execute this, which ſhould be done with a ſteady hand, and great caution, it being of very different degrees of thickneſs in different caſes. In the bubonocele, or that which is confined to the groin, the ſac is moſt frequently thin, conſequently more eaſily divided, and requires greater attention in the operator. In the oſcheocele, or ſcrotal hernia, if it be recent, the ſac is uſually thin alſo; if antient, it is ſometimes of conſiderable thickneſs; but whatever be the ſtate of it, if the operator has any doubt, let him, as ſoon as he has made a ſmall puncture, in what appears to him to be the hernial ſac, endeavour to introduce a probe into it; this will give him the neceſſary ſatisfaction; for

if he has not pierced the ſac, the probe will be ſtopped by the cells of the common membrane, and if he has, it will paſs in without any obſtruction. The place to make the inciſion in the hernial ſac, is about an inch and half below the ſtricture, and need not be larger than to admit the end of the operator's fore-finger, which, conſidering the great dilatability of theſe membranes will be a very ſmall one; the fore-finger, introduced into this aperture, is the beſt of all directors, and upon that a narrow bladed, curved knife, with a bold probe point, will be the only inſtrument neceſſary to finiſh the operation. With this knife on the finger, (the point of the former being always ſhort of the extremity of the latter) the ſac muſt be divided quite up to the opening in the tendon, and down to the bottom of the ſcrotum.

Upon the firſt diviſion of the ſac, a fluid generally ruſhes out, which fluid is different in quantity, colour, and conſiſtence, according to the date, ſize, and ſome other circumſtances attending the rupture.

This fluid has ſometimes been mentioned as a defence againſt an accident from

the knife, in the firſt diviſion of the hernial ſac, as if it kept the inteſtine at ſuch a diſtance, as thereby to leſſen the hazard of its being wounded; but this is a very fallacious circumſtance, and never to be truſted; the ſecurity of this operation depends intirely on a competent knowledge of the parts, a ſteady hand, and an attentive eye.

Different operators, eſpecially among the French, have propoſed a number of different inſtruments for the ſafe performance of this inciſion; the biſtouri cachée, the biſtouri herniare, the winged director, the blunt ſciſſars, &c, &c. &c. all which are calculated for the defence and preſervation of the inteſtine, in the diviſion of the ſac and tendon; but whoever will make uſe of the two knives juſt mentioned, will find, that he will never ſtand in need of any other inſtrument, and that he will with them be able to perform the operation with more eaſe to himſelf, with leſs hazard to his patient, and with more [r] apparent

[r] They who are not accuſtomed to perform operations of ſuch conſequence as this is, are apt, from timidity, to be

parent dexterity, than with any other whatever.

The ſac being laid open, the inteſtine generally puſhes out immediately, (unleſs it is confined, by being enveloped in the omentum) and appears to be much more in

be too ſparing in making their inciſion, by which means they add conſiderably to their own embarraſſment, and to the fatigue of the patient. A free diviſion of the hernial ſac and ſcrotum downwards, gives room for the more eaſy admiſſion of the finger into the ſtricture, in order to divide it, and affords an opportunity of handling the inteſtine or omentum more gently, as well as properly, in order to return them into the belly, both which neceſſary parts of the operation are much impeded by a ſmall inciſion.

As therefore no poſſible advantage can ariſe from a ſmall wound, but on the contrary it may be attended with great inconvenience, both to the patient and ſurgeon; I would take the liberty of adviſing when ſuch an opening is made in the hernial ſac, as will admit the operator's fore-finger, and upon it his knife, that he immediately divide the ſac and ſcrotum down to the bottom. It is true that upon ſuch diviſion the quantity of inteſtine will ſeem to be increaſed, and an ignorant by-ſtander may be alarmed at this fallacious appearance, which is produced merely by the confined, compreſſed gut being ſet free, and not by the addition of any more. The advantage which will ariſe to the operator, and conſequently to the patient, from ſuch diviſion, is real and great, it will enable the former to finiſh his work with freedom, and ſpare the latter a great deal of pain.

in quantity than it ſeemed to be, while it was confined within the ſcrotum.

This is the time to try whether by gently drawing out a little more of the gut, its bulk cannot be ſo reduced as to enable the ſurgeon to return it back into the belly, without dividing the tendon. In the caſe of the protruſion of a very ſmall piece of inteſtine, it has been found practicable, the difficulty of returning a large portion ariſing principally from the quantity of meſentery engaged in the ſtricture; and indeed, though it may now and then happen that a ſmall piece of gut may be returnable without a diviſion of the tendon, yet if it cannot be very eaſily accompliſhed, it had better not be attempted, ſince in the ſtate which this part muſt neceſſarily be to require the operation thus far, any degree of force uſed to it will moſt probably be more prejudicial and hazardous than the reſt of it, if performed properly with a knife.

An attention to the natural ſtructure, figure, and direction of the parts, will give us the beſt information how to make the diviſion of the ſtricture to the beſt purpoſe, and with the leaſt hazard.

The

The tendon of the obliquus deſcendens muſcle runs in an oblique direction from above downward, and the natural opening which is always found in it, and thro' which the hernia paſſes, is made by a kind of ſeparation of the fibres from each other; the direction of this opening is the ſame as that of the tendon, that is obliquely downward, from the os ilion to the os pubis; the knife therefore ſhould be ſo managed, as rather to continue this ſeparation, than to make any tranſverſe ſection; its edge ſhould be applied to the ſuperior and poſterior part of the oval, and carried upward, and obliquely backward, until a ſufficient opening is made to ſerve the purpoſe; by this means the fibres of the tendon will be rather ſeparated from each other than cut, and in all probability the riſque ariſing from the inciſion will be leſſened.

It is generally adviſed to make the diviſion of the ſtricture free, and large, as well to admit the eaſy return of the parts, as to prevent the inconvenience which it is ſuppoſed will be more likely to attend a ſmall wound in a tendinous body than a large one; the firſt intention, the eaſy return of the inteſtine, ſhould certainly be fulfilled, and

and therefore the incision ought always to be large enough for that purpose, and to afford an opportunity of passing the end of the finger round on the inside, in case of any adhesion; but as too large an opening may be attended with very ill consequence, it ought also to be guarded against. In the majority of cases, a small incision will be found sufficient for the purpose of reduction; and where the parts are free from adhesion, and the safe return of them is the only object of attention; a small division made in the manner already directed is not liable to any more pain or trouble than a large one, and may therefore be safely trusted.

Among the authors who write from each other, and not from practice, are to be found accounts of cases, in which the tendon only has been divided, and not the hernial sac, which latter has been returned thro' the inlarged opening, with its contents inclosed; and the same writers are very particular in their directions how to accomplish this operation. If it was practicable, (which the universal adhesion of the sac to the cellular membrane of the spermatic chord renders absolutely not so)

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there would be ſtill ſeveral material objections to the doing it, which objections, as the thing is not capable of being executed, it is needleſs to mention.

Though I am perfectly ſatisfied that the caſe of a ſtrangulated hernia is moſt frequently as I have repreſented it, viz. that the diſorder in the inteſtine is originally produced by the ſtricture made on it by the borders of the tendinous opening of the abdominal muſcle, and that the gut is in general perfectly ſound, and free from diſeaſe, before it becomes engaged in ſuch ſtricture, yet I think it right to acquaint the uninformed reader, that it has been, and ſtill is the opinion of ſome very ingenious men, that the diſeaſe is originally in the gut, and that the ſtricture is an accident ariſing from the inflammation and diſtention of it; or, in other words, that the inteſtine is firſt inflamed, and by means of the alteration produced by ſuch inflammation, becomes too large for the tendinous aperture, which therefore makes a ſtricture on it, and which, they think, is the reaſon, why the chirurgical operation is often unſucceſsful.

For

For my own part I cannot think that either the fact, or the inference is in general true.

An inflammation moſt certainly may, and frequently does attack any part of the inteſtinal canal, and conſequently that part of it which happens to be included within a hernial ſac may accidentally be ſo affected; when this is the caſe, the ſwelling and diſtention which naturally and neceſſarily attends an inflammation of the gut, will render it leſs capable, or perhaps quite incapable of repaſſing the opening in the abdominal tendon, which tendon may therefore make ſuch ſtricture on the part ſo diſeaſed, as greatly to heighten the firſt ſymptoms, and bring on ſtill worſe; and when this happens, the operation will alſo be leſs likely to be ſucceſsful, it being calculated for the relief of only ſuch ſymptoms as ariſe from a piece of inteſtine (in other reſpects ſound and free from diſeaſe) being ſo bound by the ſaid tendon, as to have its periſtaltic motion, and the circulation of the blood through it, impeded or ſtopped; whereas the other complaint, conſiſting primarily and originally in an inflammation of the gut itſelf; the mere removal of it from ſtricture, is not, nor can

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be equal to the cure of the diſeaſe. That the caſe is a poſſible one I make no doubt, having once or twice ſeen it in old ruptures, but it is a very rare one, and by no means to be admitted either as a proof that the miſchief done to the inteſtine, in the generality of ſtrangulated ruptures, does not moſt frequently proceed from the ſtricture made by the tendon, or as a diſſuaſive from performing the operation, whenever it would otherwiſe be thought neceſſary.

It is not however a mere ſpeculative point, it is really a matter of conſequence, and ought to be attended to by all thoſe who have it in their power to make frequent obſervations on ſuch ſubjects; for on the truth or falſehood of this doctrine depend a few very material points in practice, ſome of which ought ſo to influence a ſurgeon's conduct as to make it conſiderably different in one caſe from what it ſhould be in the other.

Very bad ſymptoms, ſuch as pain, tenſion of the belly, ſickneſs, vomiting, hiccough, fever, and ſuppreſſion of ſtools, are often produced in a very ſhort ſpace of time by the deſcent of a piece of gut upon ſome exertion

exertion of ſtrength, in perſons who were immediately before ſuch accident at perfect eaſe, and free from all complaints relative to the belly; if the diſeaſe be not diſcovered, or if our attempts to reduce the inteſtine are not ſucceſsful, theſe ſymptoms are heightened, and the patient often dies of a mortification; if we do ſucceed in the timely reduction, all theſe terrible ſymptoms often ceaſe inſtantaneouſly, and the patient feels neither pain nor inconvenience of any kind from that moment. Would this moſt probably and moſt frequently happen, if the diſeaſe was generally in the inteſtine, and the ſtricture of the tendon merely accidental?

In that kind of diſeaſe of the inteſtinal tube, which is ſaid to be produced by inflammation, and thought to be attended with ſpaſmodic ſtricture, or contraction of its muſcular fibres, there is ſuch an alteration made in its periſtaltic motion, and ſuch impediment in the execution of its principal offices, that what is taken into the ſtomach is rejected by vomit, and the fæces are not protruded thro' the colon and rectum, the belly is tight and painful, the

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ſkin hot, the pulſe quick and hard, and the patient feels a reſtleſsneſs and anxiety which are very diſagreeable: this is one of thoſe caſes which require immediate aſſiſtance, and will admit of no delay; the progreſs of the ſymptoms from bad to worſe is generally very rapid, and if the diſeaſe be not ſoon ſubdued, the patient dies. Free and repeated evacuation by phlebotomy, and lenient purges, the uſe of a ſemicupium, a warm bath, glyſters, and ſometimes briſk cathartics, joined with opium, are the remedies generally preſcribed, and if made uſe of in time, are often ſucceſsful, but if neglected, the caſe moſt frequently ends ill.

It is very true that the ſame ſymptoms occur in a ſtrangulated hernia; but if that hernia be reducible, they generally ceaſe upon ſuch reduction, nor does the patient want any other aſſiſtance than what is neceſſary to prevent a new deſcent of the gut: in this reſpect therefore the two caſes differ very materially; in the latter, nature ſtands in need of no farther aſſiſtance from art, but as ſoon as the manual operation is performed, returns to the execution of her

her natural functions; in the former ſhe is found ſo very inſufficient toward aſſiſting herſelf, that it ſeems to be one of the few caſes, in which medical aſſiſtance can hardly ever be diſpenſed with.

Now if the bad ſymptoms attending an unreduced rupture were primarily owing to an inflammation of the inteſtine within it, and that the tendinous aperture made a ſtricture on it, only in conſequence of the diſtention of the gut; allowing this ſtricture to aggravate the complaint conſiderably, yet the diviſion of it, or the reduction of the inteſtine, can never be ſuppoſed to do more than alleviate, or remove ſuch aggravation; the original inflammation of the gut muſt ſtill remain, nor can it be ſuppoſed to be leſſened by the inteſtine having been girt tight by the tendon; and yet, as I have juſt now obſerved, we very rarely (at leaſt in ruptures that are not of ancient date) meet with any trouble or complaint after reduction is timely and compleatly made, and the inteſtine returned into the belly in a ſound ſtate; the vomiting moſt frequently ceaſes immediately, or in a very ſhort ſpace of time;

time, a diſcharge is made by ſtool, the tenſion of the belly goes off, and tho' the patient is not always inſtantaneouſly well, in caſes where the ſymptoms have been very threatening, yet all ſuch complaint as proceeded from an obſtruction to the execution of the proper offices of the inteſtinal canal, generally diſappear immediately.

From the nature and progreſs of the ſymptoms, in a *miſerere* (as it is called); from the extreme pain of the firſt attack; from the perfect eaſe a little while before death; and from the mortified appearance of the inteſtines after ſuch event, I think it is moſt probable that if we could have an opportunity of ſeeing the inteſtine during the firſt part of this complaint, we ſhould find all the appearances of inflammation; whereas in many of thoſe upon whom the operation for the bubonocele is ſucceſsfully and timely performed, this is not the caſe; the inteſtine ſeldom bears marks of high inflammation, unleſs the operation has been long delayed, nor do the ſymptoms of ſuch complaint uſually attend afterward. The mortified part often does not exceed an inch, or an inch and half in

length, and is almoſt always confined to that part of the gut, which is on the outſide of the tendinous opening, all within the belly being ſound and fair. To which may be added this circumſtance, that when the parts contained in a hernial ſac become mortified by the delay of the operation, the ſac itſelf, (which has no immediate connection with the inteſtine, or its veſſels) the cellular membrane covering it, nay the ſkin is often found in the ſame ſtate.

Theſe are my principal reaſons for believing that the mere ſtricture made by the tendon, is, in the generality of incarcerated ruptures, not only a ſufficient, but the primary, and indeed the ſole cauſe of all the ſymptoms, and all the miſchief; and therefore I muſt alſo be of opinion, that whoever neglects to perform, or at leaſt to propoſe the operation, when he finds reduction impracticable, and the ſymptoms preſſing, does in ſome meaſure contribute to the deſtruction of his patient[r].

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[r] Indeed, tho' we ſhould ſuppoſe the caſe to be as thoſe gentlemen have repreſented it, viz. that the complaint begins

On the other hand, I am convinced by ſome inſtances which I have met with, (and which one time or other I hope to be able to preſent to the publick, in a collection with many others) that the opinion has ſome foundation in truth, and that perſons labouring under old ruptures, which have been long in the ſcrotum without giving any trouble, in which the quantity of inteſtine is often very large, the tendinous aperture much dilated, and the hernial ſac thick and firm, are thoſe to whom this misfortune has happened, and who indeed, if their caſe be duly conſidered, will be found moſt liable to it; there being

begins in the inteſtine, and that the ſtricture made by the tendon is not a primary cauſe, but an effect of the diſeaſe, I do not ſee how we can avoid propoſing the operation; for whether the increaſed ſize of the gut be owing to the inflammation, which renders it too large to paſs the abdominal opening, or whether it be the mere effect of ſtricture made by the tendon, in either caſe it will bind equally, and the event muſt be exactly the ſame, as far at leaſt as the ſtricture has to do with it: for when the inteſtine is inflamed, whether ſuch inflammation preceded or ſucceeded the confinement of it by the tendinous opening, the ſymptoms can never be appeaſed, but by the releaſe of the gut from its confinement.

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being no reaſon in nature why that part of the inteſtine which is contained in ſuch a hernia, ſhould not be ſubject to every complaint, or diſeaſe, to which every other part of that canal is liable; and this opinion I am more confirmed in, by having met with more than one ſubject with ſuch old ruptures, who have had all the ſymptoms of a ſtrangulation, and in whom, I am ſure there was no ſtricture made by the tendon, though the gut remained in the ſcrotum.

Although I have thro' the courſe of this ſection repeatedly recommended the early performance of the operation, yet I muſt deſire not to be miſunderſtood, as if I meant to adviſe it before proper attempts had been made for reduction, or the ſymptoms become alarming; much leſs that I would propoſe it as a means to obtain a radical cure in thoſe ruptures which are returnable by the hand merely; a thing boaſted of, and practiſed by pretenders, but not to be thought of by any man who has either judgment, humanity, or honeſty.

The only intent of it ſhould be to preſerve life, by reſcuing the patient from the hazard

hazard of mortification, likely to enſue from the ſtricture; and though I have preſſed it with ſuch view, and in ſuch circumſtances, and think it ought always to be done, yet I ſhould be very ſorry to have it thought that I encouraged the performance of it wantonly, or unneceſſarily, which muſt be the caſe, whenever it is done with any other intention.

Conſidered as a means to obtain a perfect or radical cure, or to prevent the neceſſity of wearing a truſs, every man at all converſant with theſe things knows, that it moſt frequently fails of procuring that end, and that moſt of thoſe people who have been obliged to ſubmit to it for the preſervation of their lives, have alſo been obliged to wear a bandage ever afterwards, to prevent the inteſtine from ſlipping down, behind the cicatrix, into the groin.

In ſhort, though the danger from the operation, when performed in time, is in my opinion never to be mentioned with that which muſt ariſe from the ſtricture, if neglected, yet it never ought to be attempted but with a view to prevent the

impending ill effects of ſuch ſtricture, and will not ever (I dare believe) be put in practice with any other intention, by any fair or judicious practitioner, by any man who has the leaſt regard for his own character, his fellow-creature's ſenſations, or for any thing but money[t].

THE ſac and ſtricture being laid open and divided, the contained parts come into view, and according to the different circumſtances of the rupture, and of the patient, will be found in different ſtates, and require different treatment.

Theſe ſtates are reducible to three general heads, that is, the contained parts will be found, either in a ſound, healthy, looſe, unconnected ſtate, and fit for immediate

[t] Perhaps it may appear extraordinary, but this neceſſarily ſevere operation, has by ſome of our modern quacks, been recommended, and even practiſed, for the cure of omental hernias; more than one perſon has loſt his life, that is, has been murdered in the attempt; but that ſeems to be a circumſtance of ſmall importance in the minds of theſe operators, nor does it at all prevent the credulous part, that is, the majority of mankind, from truſting them; though one would imagine that much ſtronger proofs, either of the judgment, humanity, or honeſty of ſuch practitioners were not requiſite.

diate reduction; or in a ſound ſtate, but from ſome particular circumſtances, incapable of being immediately replaced, or in an unſound, diſeaſed ſtate, and requiring to be treated accordingly.

If the rupture conſiſts of a piece of inteſtine only, and that neither mortified, nor adherent, the ſooner it is returned, the better, and the more gently it is handled for reduction, the better alſo.

If the inteſtine be accompanied with a portion of omentum, the latter (if in a proper ſtate) ſhould be returned firſt.

In returning the inteſtine, care ſhould be taken to endeavour to put in that part firſt which came out laſt, otherwiſe the gut will be doubled on itſelf, and the difficulty and trouble be thereby much increaſed; and in making the reduction, the fingers ſhould be applied to that part of the inteſtine, which is connected with the meſentery, rather than its convex part, as it will both ſerve the purpoſe better, and be leſs likely to do miſchief.

While the reduction is making, the leg and thigh on the ruptured ſide ſhould be kept elevated, as ſuch poſition of the

limb will much facilitate the return of the parts.

Long confinement in the ſcrotum will, in ſome people produce ſlight adheſions, by ſlender filaments, which are generally very eaſily ſeparated by the finger, or divided by a knife, or ſciſſars, whether the adheſions be of the parts of the inteſtine *inter ſe*, or to the hernial ſac. If the adheſion be of the former kind, and ſuch as proves very difficult to ſeparate, it will be better to return the gut into the belly as it is, than to run the riſque of producing an inflammation by uſing force; if it be of the latter, that is, if the connection be with the ſac, there can be no hazard in wounding that, and therefore it may be made free with.

It has been ſaid by ſome writers, that if the piece of omentum be ſo very adherent, that the ſurgeon does not chuſe to ſeparate it, that it may very ſafely be left, that it will firſt ſuppurate and then ſhrink, and very little retard the healing of the ſore. What experience the gentlemen who talk in this manner may have had of this kind of caſe, I know not, but I never yet have

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ſeen any, in which it could poſſibly be thought neceſſary to leave the patient in ſuch circumſtances, or in which an attachment of the omentum was incapable of being ſet free, either by diſſecting its adheſions, or retrenching a part of it.

The prolapſed parts being replaced, the next object of conſideration is the hernial ſac; this, if large, thick, and hard, will prove ſlow, and difficult of digeſtion, render the edges of the ſore tumid, and painful, and often retard a cure conſiderably, by producing troubleſome abſceſſes in the ſcrotum.

A conſiderable part of it may very ſafely and properly be removed; no part of it is of any conſequence, except the poſterior, or that with which the ſpermatic veſſels are connected, all the reſt being looſe, by means of the cellular membrane, is therefore very eaſily ſeparable, and had better be removed than left.

It has been propoſed by theoretic writers to paſs a ligature round the upper part of the neck of the ſac, in order as it is ſaid to procure the union of its ſides, and thereby more certainly to prevent the fu-

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ture deſcent of any thing from the belly: but to this there are many objections; the principal of which are, that if the ligature was not made ſtrict, it could ſerve no purpoſe, and if it was, it would be very likely to injure the ſpermatic chord, if included in it; by preventing part of the diſcharge, it might alſo occaſion very troubleſome ſymptoms; and, upon the whole, is by no means adviſeable.

It has alſo been ſuppoſed that the inteſtine may be found ſo adherent, as not to admit of being ſet free, and in this caſe it has been adviſed to remove the ſtricture, by dividing the ſac, and the tendon, and then to leave the parts looſe. This is mentioned by many writers of eminence, and therefore I have taken notice of it, though it is a kind of caſe which, I muſt own, I have never ſeen, nor do I ſuppoſe that I ever ſhall. I have ſeen the inteſtines very firmly adherent to each other, to the ſac, to the omentum, and to the teſticle; but never in ſuch a ſtate of adheſion, as to be incapable of being returned. The adheſion of the parts of the inteſtine *inter ſe*, are moſt frequently eaſily ſeparated; but

but if they ſhould not, ſtill theſe are no hindrance to the gut being returned; and if the caul be ſo connected as to prove troubleſome to detach, it may with great ſafety be cut off; ſo that the connexion here meant, muſt be of the inteſtine with the hernial ſac: of theſe two parts we are intereſted only for the preſervation of one, and may without hazard make free with the other; the ſeparation may indeed be tedious, and ſometimes difficult, but let the difficulty or trouble be what they may, the ſeparation muſt be accompliſhed, it being abſurd to think of leaving a piece of inteſtine looſe, in the divided ſcrotum, which, from the removal of the ſtricture above, will be liable to be increaſed in quantity, from every unguarded motion, and ſubject to all the inconveniencies which the influence of the air muſt neceſſarily produce on ſuch tender parts; not to mention the great difficulty of managing the ſore in this ſtate, and the pain, and other bad ſymptoms, which muſt ariſe from the daily uncovering the inteſtine. Any trouble, therefore, which may attend the ſeparation, muſt be ſubmitted to, ra-

ther than to follow this ſtrange advice, which indeed the writers who give ſeem not to underſtand, for to leave the parts as they were found, and as they direct, is impoſſible; they were found contained in a hernial ſac, and in the ſcrotum, defended from the air, and in ſome degree limited as to quantity, both by the ſtricture above, and the ſac below; the neceſſary operation has removed that ſtricture, divided the ſac and ſcrotum, and ſet all looſe and free, and therefore if the inteſtine be not returned into the belly, and kept there, the quantity which may fall out, may be ſo large as to produce the moſt fatal conſequences, notwithſtanding any attachments which ſome part of the canal may have contracted.

SECTION VI.

HITHERTO the parts compoſing a rupture have been conſidered as diſplaced, as inflamed, as having contracted unnatural connections and adheſions, but being ſtill ſo unhurt in their texture, as to remain

remain ſound, within the laws of the circulation, fit to be returned into the belly, and affording a reaſonable proſpect of ſucceſs in the event.

But, on the other hand, if the inflammation ran very high, and has either been neglected, or not given way to proper treatment, and the operation has been too long deferred, the parts, tho' looſe, may become ſo diſeaſed, as to be unfit for immediate reduction.

The diſeaſe here meant is gangrene, or mortification, produced by the ſtoppage of the circulation of the blood through the part which is on the outſide of the ſtricture. The gangrenous, or mortified ſtate of theſe parts may be of more or leſs extent, according to the quantity contained in the ſac; but be the extent of ſuch diſeaſe what it will, the part ſo affected ought never to be returned looſe into the belly, (more eſpecially if it be inteſtine) without ſome caution.

The omentum indeed may be made more free with. If this is ſo altered as to be plainly unfit for immediate reduction, it may be removed, that is, the altered part may be cut off from the ſound.

This

This is certainly true; but it is a point of practice which appears to me to deſerve ſomewhat more regard than is moſt commonly paid to it by writers. All that is generally ſaid of it is, that if the omentum be found in an unſound ſtate, a ligature ſhould be made on it juſt above the altered part; what is below ſuch ligature ſhould be cut off, and the ligature ſhould be left hanging out of the wound, that it may more eaſily be taken away, when it is caſt off. This is the general doctrine, and indeed the general practice; but which I cannot help thinking is delivered down, and followed by us ſomewhat inconſiderately.

When the omentum is in ſuch ſtate as to be fit for being returned into the belly, ſuch return ought never to be neglected, or omitted; the uſes of the caul are great and obvious, and the want of it muſt be productive of inconvenience to the patient; its warmth, its greaſineſs, its lubricity, its extenſion over the ſurface of the inteſtines, together with the conſtant motion of that canal, prove its utility, and in ſome meaſure point out what the inconveniencies muſt

muſt neceſſarily be, which follow the removal of it. But it is ſometimes found in ſuch ſtate, as to be unfit for reduction; and then we muſt embrace the leſſer of the two evils, and remove ſuch part of it as we ought not to return. This is ſaid by every body, and is certainly true; but ſeems to me, as I have juſt now obſerved, to require more conſideration than is generally ſpent upon it, as well with regard to the ſtate requiring ſuch operation, as the manner of executing it. It is commonly ſaid that if it be found in large quantity, conſiderably hardened, or if it be altered in its texture, (that is, by gangrene or mortification) that it ought to be retrenched. The two ſtates ſaid to require this retrenchment are very materially different from each other; the neceſſity of it in the latter is evident; but I cannot help ſaying that I think it is ordered in the former very unneceſſarily; and that the general method alſo of performing it in the latter, appears to me to be both injudicious and prejudicial. There may poſſibly now and then occur a caſe, in which ſuch alteration may have been made in

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the mere form and conſiſtence of the prolapſed piece, by induration, inlargement, &c. that the removal of a part of it may become neceſſary; but this, though it does happen ſometimes, is very unfit to be made a general rule of. The reaſon given, is, that it will lie uneaſy in a hard lump within the patient's belly; which is not neceſſarily or generally true, as I have ſeveral times experienced; having returned it when its form and conſiſtence have been much altered, without finding any future inconvenience: ſo that ſuch alteration merely, is not a general reaſon for cutting it off.

On the other hand, I am ready to allow, that it ſometimes is, and that the piece of caul ſo altered had better be removed, and that it may alſo be ſo connected, that it will be more to the patient's advantage to have ſuch connected part taken away at once, than go through the pain and fatigue which the ſeparation may require; in which caſe, my objection lies principally againſt the preſcribed method by ligature. Indeed when it is in a gangrenous ſtate, a part of it muſt neceſſarily be removed,

as ſuch ſtate makes the return of it into the belly highly improper. To accompliſh this, we are ordered to make a ligature on the ſound part of the omentum, juſt above what is altered, and then to cut it off immediately below ſuch ligature: and the reaſon given for doing it in this manner, is, that all the altered part may be removed without any riſque of hæmorrhage. This method of acting is founded on a groundleſs fear, and is often attended with bad conſequences, which not being ſuppoſed to flow from this cauſe, are not ſet to its account.

The fear of hæmorrhage from the divided veſſels, if the omentum be cut in a ſound part, and the apprehenſion of miſchief, likely to enſue from the ſhedding of ſanies, or matter into the belly, if the diviſion be made in the diſeaſed, gave riſe to the practice of tying it before amputation; but neither the one nor the other of theſe apprehenſions are well grounded, nor are they ſufficient reaſons for ſuch practice. The fear of hæmorrhage is almoſt, if not perfectly without foundation, as I have ſeveral times experienced; and the diſ-

charge of a fluid of whatever kind from the border of the divided membrane, is of no conſequence at all; neither would the ligature prevent it if it was, as muſt appear to every one who will give the ſubject one moment's ſerious conſideration.

But this is not all: I am ſorry to ſay that I am by experience convinced, that making a ligature on the caul is not only unneceſſary, but frequently pernicious, and ſometimes even fatal.

A mere theoretical conſideration of the parts will convince any one of the probability of miſchief ariſing from ſuch practice; but beſides theſe conſiderations, I can take upon me to ſay, that I have ſeen it add to the hazard of the caſe, and more than once deſtroy the patient; I have ſeen the omentum become diſeaſed, and gangrenous in all its extent, above the ligature, between it and the ſtomach, when it was not gangrenous at all before it was tied; but on the contrary, in a ſound ſtate, and only tied in order to its being more ſecurely retrenched, I have ſeen a whole train of bad ſymptoms, ſuch as nauſea, vomiting, hiccough, fever, anxiety, reſtleſsneſs, great

pain

pain in the belly, and an incapacity of ſitting upright, or even of moving, without exquiſite pain, precede the death of a man, whoſe omentum was tied, merely becauſe of its enlargement, whoſe inteſtines uninterruptedly from the time of the operation to his laſt hour, performed their proper office of diſcharging the fæces, and were found perfect and untainted after death, but whoſe omentum appeared in a highly inflammatory ſtate in general, and in many parts above the ligature gangrenous.

The direction given by many writers to put the patient's body in motion, or to give him a kind of ſhake, in order to ſet to rights the diſturbance and derangement produced by tying the caul, would be too abſurd to mention, did it not ſerve to prove that even the very people, who have perſiſted in this pernicious practice, were themſelves ſenſible of ſome of its probable ill conſequences; though they would not try to remedy them; they thought that thoſe which might follow from hæmorrhage, or the diſcharge of ſanies, were ſtill greater, but made no experiment, in order to know whether they were or not.

I will not pretend to ſay that there never was a dangerous, or fatal flux of blood, from the diviſion of the omentum, without ligature, but I can truly ſay that I never ſaw one; that I have ſeveral times cut off portions of it, without tying, and never had trouble from it of any kind, though I have always made the exciſion in the ſound part, and that from the ſucceſs which has attended it, I ſhall always continue to do ſo, whenever it ſhall become neceſſary. Upon the whole, I cannot help thinking the ligature both unneceſſary and pernicious, and can venture from experience to ſay, that any portion of the caul, which it may be thought neceſſary to remove, may very ſafely be cut off, without any previous tying.

The beſt and ſafeſt method of performing this operation, is with a good pair of ſtraight ſciſſars, having firſt expanded it, as well on account of its more eaſy diviſion, as to prevent the miſchief which would attend the cutting a piece of inteſtine, if it ſhould chance to be wrapped up in it; and if any fear ſtill remains of hæmorrhage, the exciſion may, in the caſe of morti-

mortification, be made juſt within the altered part of it; in which caſe, there will no more be left to be caſt off, than there muſt be when a ligature is made.

If the gangrene, or ſphacelus, have taken poſſeſſion of the inteſtine, and conſiſts of a ſmall ſpot only, which by caſting off, might endanger the ſhedding its contents into the belly; the method of endeavouring to prevent that inconvenience is, by connecting the upper part to the wound by means of a needle and ſtrong ligature; by this means, when the mortified part ſeparates, the fæces are diſcharged by the wound for ſome time; after which it has been known to contract gradually, and heal firmly; but whether the event proves ſo lucky or not, this method of ſecuring the gut ſhould never be omitted.

In making this artificial attachment of the inteſtine to the inſide of the belly, care muſt be taken not to wound the gut, the needle muſt be paſſed through the meſentery, at a ſmall diſtance from the inteſtine, and ſuch a portion of that body included within the ſtitch, as ſhall be likely to hold faſt long enough to render the connection

probable. If the altered portion of the gut be of such extent, as to require excision, but yet not so large as to prevent the extremities of the divided parts from being brought into contact with each other, their union must be endeavoured by future; in doing this, the ends of the intestine should be made to lie somewhat over each other, by which means the future will be the stronger; and when the two ends are thus sewed together, they must both be fastned to the inside of the belly, at the upper part of the wound, that in case the union does not take place, the discharge of fæces may, if possible, be made through the groin. But if the disease is of such extent as to prohibit the bringing the two ends together, the treatment must be different. In this case, as it is impossible to preserve the continuity of the intestinal canal, the aim of the surgeon must be to prevent the contents of it from being shed into the belly, and to derive through the wound in the groin, all that which should, in a sound and healthy state, pass off by the rectum and anus.

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To accompliſh this, he muſt take care that neither extremity of the divided inteſtine ſlip out of his fingers; then with a proper needle, and a ſtrong ligature, he muſt connect both of them to the upper edge of the wound; the ſuture, with which the connection is made, muſt not be ſlight, leſt it caſt off before a due degree of adheſion is procured; and it muſt alſo be made in ſuch a manner as to preſerve the mouth of the gut as free and as open as may be, upon which the patient's ſmall remaining chance does in ſome meaſure depend The method adviſed by La Peyronie, of ſtitching the meſentery inſtead of the inteſtine, is judicious and right.

The dreſſing in this caſe ſhould be as ſoft and as light as poſſible, nothing heavy, nothing crammed in, nothing which can irritate or give pain; and the patient muſt obſerve the moſt rigid ſeverity of diet, and the moſt perfect quietude both of body and mind: with regard to medicine, whatever is exhibited muſt be calculated to procure reſt and eaſe, to quiet the febrile heat, to keep the body open, and if neceſſary, (as it moſt frequently muſt be) to reſiſt putrefaction.

All the reſt muſt be left to nature, who is by her great Creator furniſhed with ſuch powers, as ſometimes to produce wonderful effects, even in theſe deplorable caſes.

This is the ſubſtance of the beſt practice, and of the moſt approved doctrine, in theſe circumſtances, and which has ſometimes been attended with a fortunate event, but the practitioner who is ſo ſituated as to ſee but little of this kind of buſineſs, ought to be apprized how very little reaſon there is to hope for, or to promiſe ſucceſs.

More cenſure is incurred by an unguarded prognoſtic, than by a ſucceſsleſs event, if properly and judiciouſly foretold; and if a man was to form his judgment upon this, and ſome other hazardous diſorders, from books only, he would expect very little of that trouble and diſappointment, which he will moſt certainly meet with in practice.

Writers in general are too much inclined to tell their ſucceſſes only, and are fond of relating caſes of gangrene and mortification, in which large portions of inteſtine have been removed, the proper operations performed with great dexterity,

and

and in which the events proved fortunate; and of this they all give us inſtances, either from their own practice, or that of others, or perhaps ſometimes from imagination; by which the young reader is made too ſanguin in his expectation.

That theſe extraordinary ſucceſſes do ſometimes happen is beyond all doubt; and it is every man's duty to aim at the ſame by all poſſible means; but ſtill the inexperienced practitioner ſhould alſo be informed, how many ſink for one that is recovered, and how many lucky circumſtances muſt concur, with all his pains, to produce a happy event in theſe very deplorable caſes. Without this caution he will meet with very irkſome diſappointments, and having been often baffled, where he thought he had good reaſon to expect ſucceſs, he will ſometimes meet with it ſo very unexpectedly, that he will be inclined to believe the ſarcaſtical diſtinction between cures, and eſcapes, not ill-founded.

To ſay the truth, the hazard is ſo great, and the utmoſt power of art ſo little, that what Iapis ſaid to Æneas with relation

tion to his cure, may with great propriety be ſaid here.

Non hæc humanis opibus, non arte magiſtra
Proveniunt; neq; te Ænea mea dextera ſervat:
Major agit Deus.

SECTION VII.

THE portion of inteſtine, or omentum, which compoſed an hernia, being replaced, while ſound and unhurt, either by inflammation, or gangrene, it had always, till very lately, been ſuppoſed, that if a new deſcent of them was prevented by the immediate application of a bandage, no miſchief was likely to enſue, and that while the truſs executed its office properly, the patient was thereby free from danger.

But within theſe few years, it has by ſome of the French writers been ſaid, that the hernial ſac may be ſo looſe and unconnected with the ſpermatic chord, that it may be returned into the belly, while it contains a portion of inteſtine, labouring under

under a ſtricture made by the neck of the ſaid ſac; and of this they have given inſtances of caſes,—or of what appeared to them to be ſo.

Mr. Le Dran tells us, that in one of theſe, the rupture was with ſome difficulty returned, but the ſymptoms nevertheleſs continuing, the patient died; and that upon opening the body he found the hernial ſac including a conſiderable portion of inteſtine, returned into the belly; and that the ſtricture made by the neck of the ſac, bound ſo tight, that he could not diſengage the gut from it without cutting it;—his words are,

" Nous trouvames dans le ventre le ſac " herniare, qui avoit trois pouces de pro- " fondeur, ſur huit pouces de circonfe- " rence; et dans ce ſac etoit encore en- " fermée une demie aulne de l'inteſtine " jejunum. Tenant le ſac à plein main, " je voulus en faire ſortir l'inteſtin, en le " tirant par l'un de bouts; mais la choſe " me fut impoſſible, tant l'entrée du ſac " etoit reſſerrée, & je n'en vins au bout, " qu'en dilatant cette entrée avec les ci- " ſeaux." &c.

In De la Faye's notes on Dionis may alſo be ſeen an inſtance of this kind of caſe, or at leaſt of what was taken for ſuch.

I have already given my opinion concerning the practicability of returning a hernial ſac back into the abdomen, after it has been out any conſiderable length of time; I never ſaw, either in the dead or the living, any reaſon to ſuppoſe it poſſible; the aſſertions of theſe gentlemen are very poſitive, and I muſt leave the reader to judge of them as he can.

The ſtraitneſs of the neck of the ſac is ſuppoſed to be produced by the preſſure of the bolſter of a truſs, worn to keep the parts from deſcending. This part of the ſuppoſition is probable, but it muſt alſo be conſidered, that the ſame preſſure muſt almoſt neceſſarily occaſion adheſions of the outſide of the ſac to the ſurrounding cellular membrane; and if we were to ſuppoſe the ſac looſe and unconnected in every other part, (a thing I muſt own I never ſaw) yet this alone would for ever prevent its return into the belly.

It is indeed repreſented as a circumſtance not very frequently occurring, which is fortunate for mankind; as it can neither be foreſeen nor prevented, and would add conſiderably to the hazard of ruptures.

It is ſaid, that by carefully attending to the manner in which a rupture goes up, we may diſtinguiſh whether the ſac returns with it or not; that if it does, including the gut, a hard body will be perceived to paſs under the finger, and that the inteſtine in its paſſage through the abdominal opening, will not make that kind of guggling noiſe, which it is uſually found to do, when the ſac does not return with it. This inſtead of being the characteriſtical mark of the return of the ſac, will almoſt always be found to be the caſe, when a portion of omentum which has been much compreſſed, goes up at the ſame time with the gut; and therefore, however ingenious this obſervation may ſeem, conſidered theoretically, it is not to be depended upon in practice.

But ſuppoſing we had ſome clear and undoubted marks, by which we could always know when this was the caſe, I do not ſee how we could avail ourſelves of them;

them; the inteſtine muſt be returned before we can have our information; and if inſtead of the uncertain, deluſive reaſons juſt given, we had the cleareſt and moſt ſatisfactory marks of what is ſuſpected, we have no remedy, but a very perplexing, tedious, and painful operation, which, I fancy, as few ſurgeons would in theſe circumſtances chooſe to perform, as patients ſubmit to.

I call theſe marks or ſymptoms, which theſe gentlemen have given us, doubtful and deluſive, becauſe they do not with any degree of certainty indicate the cauſe to which they are owing, or from which they ariſe; for the inflammation excited in the inteſtine by its having been engaged for ſome time in a ſtricture, will ſometimes produce all the ſame complaints after its return; but no chirurgical operation will relieve them.

In the common reduction therefore of an inteſtinal rupture by the hand, I do not ſee how we can avail ourſelves of this ſuppoſed diſcovery; and when the operation by the knife becomes neceſſary, it can be of no conſequence at all; for if the operation

ration be properly performed, the hernial ſac will be divided thro' its whole length, before the inſtrument reaches the tendon; and therefore the gut can never be returned, while bound by any ſtricture from the former.

It has indeed been ſaid, that till this diſcovery was made, the ſtricture of the abdominal tendon, and the adheſion of the contents of the hernial ſac to its ſides, were the only known reaſons why any rupture ſhould be irreturnable; and that when ſuch caſe occurred, if the tendon only was divided, and the ſac reduced unopened, the patient might be loſt notwithſtanding all that had been done. To this I can only ſay, that a ſtricture made by the ſac only, is far from being a thing unknown, and is one of the principal reaſons why all judicious writers and practitioners have adviſed it to be always divided; and when this is properly executed, no ſuch conſequences can follow, even if the hernial ſac ſhould be (what I have never yet ſeen) capable of being returned into the belly.

SECTION

SECTION VIII.

RUPTURES through the openings of the tendons of the oblique muſcles in females, are ſubject to the ſame ſymptoms, and require nearly the ſame general treatment, as the inguinal ruptures of males, and, like them, frequently admit of perfect cure, if not miſmanaged or neglected at firſt; the ſame kind of truſs is alſo neceſſary, and the ſame cautions with regard to the manner of wearing it.

The open texture of the cellular membrane ſurrounding the ſpermatic veſſels, and the laxity of the ſcrotum, render the hernial tumor much larger in males than it can well be in females; neither can it deſcend ſo low in the latter, as it does frequently in the former, for reaſons which are obvious.

The female hernia, if recent, has much the ſame appearance as the bubonocele in man; and when more of the gut or caul is thruſt forth than will lie conveniently in the groin, it puſhes down into

one of the labia pudendi, and ſometimes forms a tumor of pretty conſiderable ſize.

When eaſily reducible, like that of men, it gives but little pain, and generally returns into the belly upon going to bed, or upon the patient being laid in a ſupine poſture: when it is bound by the opening of the abdominal tendon, and is therefore difficult, or incapable of reduction, it is attended with the ſame ſymptoms as the incarcerated hernia in man, and requires the ſame general treatment, of bleeding, glyſters, purges, warm bath, &c. and (theſe failing) the chirurgic operation; by which the hernial ſac is laid open, and the ſtricture made by the tendon, divided.

In males the cellular membrane which ſurrounds the ſpermatic veſſels, and the hernial ſac, is generally ſo thickened by diſtention, as to take ſome little time to cut through, and proves thereby a kind of ſecurity to prevent the ſac from being too haſtily opened; but in females it ſhould be remembered, that the hernial bag lies immediately under the membrana adipoſa, and requires to be very cautiouſly divided, on account of its contents; nor have I in

general obſerved the fluid contained in the hernial ſac of females to be equal to that which is found in males.

The piece of inteſtine which is ſtrangulated in the female bubonocele, is ſometimes ſo ſmall, as to occaſion very little tumor, and therefore, if recent, is very often, in modeſt women, not known to be the cauſe of the ſymptoms which it produces; but if by accident it returns back before it is hurt in its texture, the diſeaſe paſſes for a cholic; if it proves fatal by mortification, it is taken for a *paſſio iliaca*, or *miſerere*. The means made uſe of for the relief of either of thoſe diſeaſes, being ſuch as will not, in general, without the aſſiſtance of a ſurgeon's hand, procure a return of the protruded gut, many a uſeful life has been loſt by the real cauſe of the miſchief not being known. Every ſymptom (the tumor excepted) which accompanies a rupture labouring under ſtricture, may attend a paſſio iliaca; that is, an inflammation and obſtruction to the execution of the office of the inteſtine, whether produced by the ſtricture of the abdominal tendon, or the ſpaſmodic contraction of its

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own muſcular fibres, will be attended with the ſame kind of ſymptoms; but though the general means of relief are alike in both caſes, yet the former requires alſo the aſſiſtance of a ſurgeon's hand to replace the piece of inteſtine; or all the reſt will be abſolutely ineffectual; if that be neglected, the caſe in general will end ill, and though the miſchief is ſet to another account, and ſuppoſed to have been without remedy, yet it is very certain that timely aſſiſtance would very frequently prevent ſuch bad conſequences. It therefore behoves every medical man, who may be called to women labouring under ſuch complaints, to be very attentive to them, and if the ſymptoms run high, never to omit inquiring whether there be any tumor in the groin, belly, or pudenda, and if there be ſuch, to be informed of what nature it is, before he goes any farther, or loſes any more of that time, which in all theſe caſes is ſo very precious.

In the caſe of the dolor colicus, the pain is either round about the navel, or diffuſed in general all over the belly; the pain ariſing from a ſtrangulated rupture

is alſo very frequently general all over the belly, but is always more particularly acute at the groin, which part is alſo remarkably tender to the touch. The tenſion of the belly, and the vomiting in the paſſio iliaca, are in general the firſt, at leaſt they are very early ſymptoms; whereas they do not in general come on in ruptures, till after ſome time is paſt. Perhaps ſome other minute diſtinctions might be made between the apparently ſimilar ſymptoms of the two diſeaſes, but the beſt and moſt infallible way to know what the real ſtate of the caſe is, and thereby what ought to be done, is to have the parts examined where ſuch tumor may be expected; this removes all doubt, and gives the practitioner the ſatisfaction of knowing, that let the conſequence be whatever it may, he is purſuing a rational and probable method of relieving his patient.

SECTION

SECTION IX.

THE crural, or femoral hernia, receives its name from its ſituation, the tumor occaſioned by it being in the upper and fore part of the thigh.

To underſtand rightly the nature and ſituation of a crural rupture, it is neceſſary to attend to the anatomical ſtructure, and diſpoſition of the obliquus deſcendens muſcle of the abdomen. Whoever does this will find that that part of it which runs obliquely downward from the ſpine of the os ilion, toward the ſymphyſis of the os pubis, is tucked down, and folded inward, as it were. This edge or border, ſo folded in, is what is called the *ligamentum Poupartii* by ſome, by others the *ligamentum Fallopii*, as if it was a diſtinct and ſeparate body, but is really no more than the inferior border of the tendon of the oblique muſcle. In all the ſpace between theſe two attachments, this tendon is looſe and unconnected with any bone; all the hollow, which is made by the form of the

os ilion, between the point of the attachment of the ligament, or tendon to that bone, and its other connection at the os pubis, is filled up by cellular membrane, fat, and glands, which parts are covered, and braced down, by a fine tendinous expanſion, communicating between the tendon of the obliquus deſcendens abdominis and the faſcia lata of the thigh.

Under this tendon, or ligament, the parts compoſing a hernia paſs, and produce a tumor, on the upper and fore part of the thigh. The ſac is generally deſcribed as paſſing over the crural artery and vein, which are ſaid to lie immediately behind it; but whoever will examine the ſtate of theſe parts in a dead ſubject, will find that this is not a true repreſentation: the deſcent is made on one ſide of theſe veſſels, nearer to the os pubis; and the hernial ſac, if it be not greatly diſtended, lies between the crural veſſels, and the laſt mentioned bone, on which it reſts.

The femoral hernia is not ſo ſubject to ſtricture as the inguinal, there being a larger ſpace for the inteſtine to occupy; but when ſuch miſchief does happen, the ſymp-

ſymptoms are ſo exactly the ſame as they are in a ſtrangulated inguinal hernia, that it is quite unneceſſary to repeat them in this place. The method of attempting reduction, and the treatment of the patient in caſe of difficulty are the ſame alſo, excepting that in the inguinal, the part to be reduced ſhould be preſſed obliquely toward the os ilion; in the femoral, the preſſure ought to be made directly upward, or a little toward the pubes.

When it is not reducible by the hand only, it, like the other, becomes the object of a chirurgic operation, by which the ſac is laid open, the ſtricture removed, and the prolapſed parts returned.

The inciſion ſhould be made through the ſkin, and membrana adipoſa, the whole length of the tumor; under theſe will be ſeen the tendinous faſcia, or expanſion, and immediately under that the hernial ſac; theſe being carefully divided, and the portion of inteſtine thereby denuded, it is well worth while to try, if it cannot be returned without dividing the tendon, as there is a conſiderable ſpace between the os ilium, and the os pubis, to manage ſuch

reduction in, and as the diviſion of the tendon is not always, in this kind of rupture, ſo ſafely executed: in this there are two parts of conſequence, which lie very little out of the way of the knife, and which an operator would avoid wounding: theſe are the epigaſtric artery, and the ſpermatic chord. If the diviſion of the ligament be made directly upward, the ſpermatic chord will certainly be divided, and if, to avoid that, the knife be carried very obliquely towards the os ilium, the artery will meet with the ſame fate; and indeed if the inciſion of the ligament be made of any length, let it be made in whatever part it may, the riſque will be great of wounding one of the parts juſt mentioned, as will appear to any body who will examine them *in ſitu naturali*, and make a proper allowance for the preſſure, and diſtention of the hernial ſac.

Of the two the ſpermatic chord is certainly the moſt to be regarded, as the total diviſion of it would in all probability render the teſticle on that ſide uſeleſs. If the artery be wounded, it muſt be taken up with a needle and ligature, but the doing

ing is not ſo eaſy as the directing it to be done; the epigaſtric artery in many men is near as large as the ſmaller carpal; departs immediately from the trunk of the crural, and, at its origin, lies in a bed of fat and cellular membrane; the ſtream of blood would be pretty briſk, and the paſſage of the needle round would certainly be troubleſome, if not hazardous from the vicinity of the crural veſſels: it may undoubtedly be very happily executed, but as it muſt be attended with a good deal of trouble, and ſome riſque, it is much better to avoid the neceſſity, which I think may almoſt always be done, conſidering the large ſpace between the os ilion, and the os pubis, and that that ſpace is occupied principally by cellular membrane, and fat; or if the diviſion of the ligament be unavoidable, let the operator be particularly careful to keep the extremity of the probe-pointed knife within the end of his fore-finger, held up tight juſt behind the edge, or border of the tendon, and to make as ſmall an inciſion as may be neceſſary: the probe-ſciſſars, the common inſtrument in

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uſe for this operation, is in this caſe particularly hazardous and improper.

In all other circumſtances, this hernia, and the inguinal, are ſo ſimilar, as to need no repetition.

SECTION X.

The Congenial Hernia.

THE *congenial hernia*, as it is now called, is that particular kind of hernia, in which the portion of inteſtine, or omentum, which occaſions the tumor, inſtead of being found alone in the hernial ſac (as in a common rupture) is found in contact with the naked teſticle; the bag containing them being formed by the *tunica vaginalis teſtis*.

On this ſpecies of rupture, a few years ago I publiſhed a ſmall [a] tract; on which ſome reflections were made in the Critical Review, inſinuating that I had borrowed the ſubject or matter of them from Profeſſor Haller, and Dr. Hunter [b].

Tho'

[a] An account of a particular kind of rupture, &c. 1757.
[b] March 1757.

Tho' these reflections were said to come from a pupil of the doctor, yet they were by many of my friends thought to be his own; but as the doctor, tho' he had many opportunities, never said a word to me on the subject, I would not suffer myself to believe that he could be the author of them; not only as they were anonymous, but as they contained surmises and conjectures rather than facts: I therefore disregarded them, and should never more have recollected them, had not the doctor made a new charge on me, in his own name, and in such manner as to induce me to believe that what my friends formerly suspected was too true [c].

I am perfectly sensible of how very little importance all these disputes are to all other people except the disputants themselves; and how very difficult it is for any man to tell what relates merely to himself, in such manner as not to tire and disgust those who have no interest in it; but as I have been (to use Dr. Hunter's own word) *wantonly*, and I cannot help thinking male-

[c] Medical Commentary, No. 1.

malevolently attacked, and treated in a manner which appears to me highly ungenerous, not to say illiberal, I hope the reader will indulge me in the opportunity which this chapter affords of relating the fact; lest my silence should be misconstrued into an acknowledgment of the truth of what the doctor has said.

The appearance which this kind of hernia makes, when the sac is laid open, was first taken notice of by Mr. Samuel Sharp; to him, therefore, the honor of the discovery is most justly due. That gentleman endeavoured to account for it, by supposing that the parts which compose it came originally out from the abdomen, in a common sac; but that in some particular cases, the septum, which divides this bag from that of the tunica vaginalis testis, was broken through, or lacerated; and that one common cavity was thereby formed, containing both the gut and the testicle. Mr. Sharp has too much good sense to be offended when I say that this account did by no means satisfy me.

In

In the latter end of the year 1753, or in the beginning of 1754, (I will not be poſitive which) Dr. Hunter gave a publick lecture at the ſurgeons theatre.

As his ſubject was the male parts of generation, as his opportunities of examining dead bodies muſt have been very frequent, and as he was known to be not only a ſedulous, but an ingenious enquirer into the animal œconomy, I flattered myſelf that I ſhould obtain ſome new information from him; but the doctor ſpake of the diſeaſe, exactly as Mr. Sharp had done, and gave exactly the ſame ſolution of the appearance.

In February, 1756, I publiſhed the firſt edition of this general treatiſe on ruptures. I had then had but few opportunities of ſeeing in dead bodies the particular kind of hernia in queſtion, tho' I had often taken notice of it in operations on the living. The accounts given of it by Mr. Sharp, and Dr. Hunter, did not ſatisfy me, and not imagining it to be ſo frequent a diſeaſe, or ſo eaſy to be accounted for, as I ſoon after found it to be, I called it an *accident*, or a *luſus naturæ*.

I knew

I knew that the teſticles of a fœtus were always formed within the cavity of the belly, and imagined that the paſſage of them from thence into the ſcrotum was one principal cauſe of the frequency of ruptures in male infants; but was far from being ſatisfied, or indeed acquainted, with the preciſe manner in which it occaſioned or produced them.

Looking over a little treatiſe, written in Latin and in French, by one Reneaulme Lagaranne, and publiſhed in 1726, under the title of, "Eſſai d'un traité des hernies nommées deſcentes," I met with the following paſſage:

"Non ideo tamen ita frequenter accideret hernia, niſi alia concurrerent; adeſt ſæpius partium certa diſpoſitio, quæ illius generationem juvat; humiditas, laxitaſve membranorum, pinguedinis copia partes pondere ſuo deorſum trahens, vel quid ſimile. *At in pueris previa et obſervatione digna, ſæpius reperitur partium bubonocelen adjuvans diſpoſitio:* peritonei proceſſus dixere, quos negat Blanchardus, herniæque male curatæ reliquias cenſet, ſed ab aliis perpe-

ram

" ram pro naturali habetur diſpoſitione. " *Ubi ſcilicet vaſa ſpermatica, exteriori* " *membrana peritonei circum-ſepta, ab ob-* " *liqui externi annulo, ad teſtes feruntur,* " *ibi in infantibus ductus occurrit cæcus,* " calami ſcriptoris craſſitudine, polli- " cis longitudine, inſtar ductuum illorum " quos nonnulli obſervarunt anatomici in " canibus, et ſub cæcorum nomine de- " ſcripſerunt."

The words ſtruck me, as they ſeemed to point out a natural cauſe for the ſo frequent appearance of ruptures in young children. I immediately opened the bellies of ſome fœtuſes of different ages, which I had by me in ſpirit, and found the ducts exactly as deſcribed by Lagaranne.

The ſubject had now made an impreſſion upon me, and was uppermoſt in my mind. I mentioned it to two or three friends, and among the reſt to a very inquiſitive young gentleman, who was at that time my dreſſer at St. Bartholomew's hoſpital. He ſaid that he had a day or two before thrown ſome injection into a boy, born dead, at the full time, that he would bring it to my houſe, and that we ſhould examine it together. We did ſo; we found

found the ducts open on each side, and tracing them carefully, found also that they led immediately down to the testicles, which lay near the bottom, covered only by their proper coat, called the albuginea.

I do very readily acknowledge, that hitherto I was intent only on finding Lagaranne's *Partium adjuvans dispositio*, the *predisposing cause* of a *common hernia*, and that I had no thought of what is now called the congenial; but when I found that the ducts led immediately, and without obstruction, down to the testicles, and that the communication between the belly, and the sacculi containing them, was free and open, Mr. Sharp's observation occurred to my imagination, and I mentioned it to my companion.

As the thing gave me much pleasure, from the probability it seemed to afford of discovering a truth, I took some pains to procure a considerable number of subjects; examined them very carefully; noted all the appearances upon paper; drew such conclusions, as seemed to me most natural from the structure and disposition of the parts; made several preparations, and

shewed

ſhewed both the papers, and the preparations to many of my friends, and among the reſt to Mr. Serjeant Hawkins, Mr. Sainthill, the late Mr. Nourſe, and the late Mr Webb, who ſeemed to be pleaſed with what I had done, and adviſed me to proſecute my inquiry ſtill farther, as opportunity ſhould offer.

When I had examined a great variety of ſubjects, and found that they agreed in all the principal points, I inlarged my notes, and digeſted them into better order; and when I had ſo done, ſhewed them again to the ſame gentlemen, who had ſeen them before.

Having always entertained a high opinion of Dr. Hunter's *anatomical* abilities, I called at his houſe deſigning to have told him what I had done, and to have had ſome converſation with him on the ſubject: the doctor was not at home, but his brother Mr. Hunter was, and with him I had ſome talk. The ſame gentleman alſo ſhewed me *one ſingle preparation, tied down, in a glaſs, in ſpirit,* exhibiting the ſituation of the teſticles of a fœtus pretty near the time of their paſſing from the

abdomen into the ſcrotum, of which kind I had then ſeveral at home, and which many of my friends had ſeen. Mr. Hunter did not ſhow me any other preparation of any kind whatever; nor do I remember that the congenial hernia was once mentioned by either of us during my ſhort viſit, notwithſtanding the doctor has [d] ſaid that his brother "ſhowed me his prepa- "rations with great readineſs, and explain- "ed to me his (the doctor's) hypotheſis of "the contiguity of the inteſtine and teſti- "cle." Our converſation turned intirely on the paſſage of the teſtes from the belly into the ſcrotum, and as far as I could perceive (for he ſpake with the moſt cautious, apprehenſive reſervedneſs) our ſentiments were alike.

My papers were at this time finiſhed, and corrected for the preſs; had been in the hands of ſeveral of my friends; nor did I alter a ſingle ſyllable in them, in conſequence of this viſit to Mr. Hunter: but had that gentleman been half ſo explicit as his brother repreſents him to have been;

[d] See the Medical Commentary.

been; had he been ſo ingenuous as to have told me that either he, or the doctor, regarded themſelves as the diſcoverers of this part of the animal œconomy, (which I could not at that time have contradicted) had he ſignified that either of them had any intention to ſay, or to publiſh any thing about it; or had he made any kind of claim, or hinted an apprehenſion of being anticipated, I would either have ſuppreſſed my book, or have mentioned their names in it, in the manner I now do; that is, I would have ſaid that I had converſed with Mr. Hunter on the ſubject, and that I found our ſentiments to be much the ſame. I ſhould not have ſuppoſed that my judgment could have ſuffered any diſparagement by its being known, that I thought on an anatomical ſubject in the ſame manner as Dr. Hunter or his brother did, neither ſhould I have made the leaſt ſcruple of ſaying ſo: and as to the honour of the diſcovery, it would not have given me any concern at all.

This is a ſhort and true account of the fact; this is the thing for which I have been traduced in print, as a plagiariſt, and

for which Dr. Hunter has taken a liberty with me, which he can have no right to take.

The doctor has charged me with having been guilty of a double theft; one committed on himself, thro' his brother; and one on Baron Haller: the latter is said to be contained in my general treatise, published in 1756, the former in a little tract already referred to, and published in 1757[d]. One of these Dr. Hunter has really nothing to do with, even if his supposition was true, which it is not; the other he ought to have inquired better into, before he had so positively, as well as rudely, asserted any thing concerning it. He might then have prevented me from saying that he has published his ill-grounded suspicions for facts; and has unjustly endeavoured to injure the character of one whom he calls his *friend*.

The truth with regard to the former is, that Dr. Hunter having received from Haller his first information of what he afterwards takes the liberty of calling his *own hypothesis* of the congenial hernia[e], taken

[d] An account of a particular kind of rupture, &c.

[e] See Medical Commentary, p. 72.

takes it for granted that I must have done the same; which though it might have been true, was not. It is very certain that the baron's Opuscula had not only been published in Latin, but had, as the doctor observes, been also translated into English; but notwithstanding this, it so happened that I had never seen them.

To save the reader's time, and to cut short this part of the dispute, I do aver, that I never had seen, read, or heard of the book in either language, till some time after the publication of my pamphlet on that subject: I therefore did not, nor could borrow any part of the contents, either of that, or of my former treatise, from it: the manner in which I attained my knowledge I have already most faithfully related, and therefore think myself intitled to the reader's credit. But setting aside whatever pretension I may have to be believed upon my bare assertion; is it probable that if I had stolen my opinion from the baron's book, that I should have given so short, so imperfect, and indeed so erroneous an account of what he has so fully explained, or at least so clearly pointed out?

If I had taken my account of the deſcent of the teſticles from thence, why did I not alſo learn from thence the reaſon why the inteſtine and teſticle are ſometimes found in the ſame ſacculus? one of theſe facts was as much the ſubject of my inquiry at that time, as the other; and in the *Opuſcula Pathologica*, (the book alluded to) are both of them ſatisfactorily accounted for, and made to illuſtrate each other. Why ſhould I call the caſe related by Mr. Sharp a *luſus naturæ?* why ſteal only one half of Haller's diſcovery? why not avail myſelf thoroughly of the plagiariſm by giving a true ſolution of the appearance, ſhowing that it was not a luſus naturæ, nor produced by what Mr. Sharp and Dr. Hunter had thought was the cauſe of it, but by the inteſtine being puſhed into the open tunica vaginalis? All this is in the ſame chapter of the ſame book; from this book Dr. Hunter and his brother derived all their knowledge of both theſe ſubjects; and this book (if I had read it) muſt have informed me of both, as certainly as of one. Is Haller's account of one more plain and intelligible than of the other?

other? or is it likely that I ſhould read only what related to one, and not what related to the other, when they were not only in the ſame chapter and page, but equally parts of the ſubject I was then inquiring into.

Indeed the ſpirit of criticiſm, or more properly the deſire of finding fault, has in this inſtance got the better of that artful caution, with which Dr. Hunter moſt frequently either expreſſes or conceals his ſentiments; has carried him beyond the proper mark, and made him prove too much; ſince if I had read the Opuſcula Parthologica of Haller, previous to the publication of my general treatiſe in 1756, I muſt have obtained from thence that very information which the doctor ſays I got from his brother in 1757, at the time when he is ſaid to have explained to me the doctor's hypotheſis; for in that book, as I have already obſerved, are contained both the doctor's *hypotheſis*, (as he calls it) and Mr. Hunter's diſcovery.

I am very willing to allow that Dr. Hunter might reaſonably preſume that I had ſeen the Opuſcula; but is ſuch pre-

ſumption to be immediately admitted as a proof; or can it be thought ſufficient to authoriſe or vindicate ſo rude and ſo unprovoked an attack as he has made on me? If I had borrowed from any publication of his, there might have been ſome reaſon for his being ſo alarmed, ſome excuſe for his jealouſy; but how was he injured by a ſuppoſed, or even by a real theft committed on Haller? Is it a mere virtuous diſlike of plagiariſm, which actuates the doctor upon this occaſion, or is he determined that nobody but himſelf ſhall make free with the Baron?

The doctor is ſo obliging as to ſay, that my performance "aſtoniſhed him, if poſſible, more than profeſſor Monro's on "the lymphatics had done; that it contained hardly one new idea; that it "might have been written by any of his "pupils; that I had mentioned neither "his, nor his brother's name in it; and "that it bore in its compoſition the evident marks of *ſecond-hand obſervation*, "and of *time-ſerving hurry*."

This is ſuch a ſpecimen of good-manners, as well as of good-writing; the charge

is

is ſo civil, ſo modeſt, and made in ſo decent and gentleman-like language, that I am almoſt ſorry to be obliged to contradict it.

I do indeed moſt ſincerely wiſh that ſome one of the doctor's pupils had prevented me from being engaged in this affair, by having publiſhed what, *he ſays, they all knew;* to which he might have added, *and they only;* for the reſt of the medical world were ſo totally unacquainted with the ſubject, that mean and trite as my performance was, I received the thanks of many, I might ſay moſt of the practitioners of eminence, both in phyſick and ſurgery, for it. They acknowledged themſelves pleaſed and informed, and thought that it furniſhed them with a new idea; and what is more, do ſtill continue to think ſo, notwithſtanding the doctor's aſſertion.

The not having mentioned the doctor's name is a crime indeed. That any man at this time ſhould dare to publiſh any thing in anatomy without paying doctor Hunter his tribute of praiſe! more eſpecially as I had had ſome converſation with his brother on the ſubject. This latter conſideration

consideration induces me to acknowledge, that I really wish I had related what passed; more especially as the doctor thinks, or at least insinuates, that I concealed it with design to anticipate him, and to prevent him from enjoying the honour of what he chuses to call his own hypothesis.

I do assure him that this was not my motive, and that I had no such intention; but supposing that I had; supposing that not having read Haller, nor having by my own inquiry attained a true knowledge of the subject, I had really regarded Dr. Hunter and his brother as the discoverers of these truths, and had made up my pamphlet with what I had purloined from my conversation with the latter: I say, supposing all this, I do not see how either of these gentlemen can with any degree of candor charge me with having prevented them from enjoying the honour of a discovery. The theft would have indeed been palpable on my side, had this been the case, but could either the doctor or his brother, (who must be conscious that they had borrowed all their information from Haller)

which were afterwards diſcharged through the urethra.

Bartholin ſpeaks of T. Dom. Sala as the firſt diſcoverer of the diſeaſe, and quotes a caſe from him, in which the patient had all the ſymptoms of a ſtone in his bladder; the ſtone could never be felt by the *ſound*, but was found in the bladder (which had paſſed into the groin) after death.

As the bladder is only covered in part by the peritoneum, and muſt inſinuate itſelf between that membrane, and the oblique muſcle, in order to paſs the opening in the tendon, it is plain that the hernia cyſtica can have no ſac; and that when complicated with a bubonecele, that portion of the bladder which forms the cyſtic hernia muſt lie between the inteſtinal hernia, and the ſpermatic chord, that is, the inteſtinal hernia muſt be anterior to the cyſtic.

A cyſtic hernia may indeed be the cauſe of an inteſtinal one; for when ſo much of the bladder has paſſed the ring, as to drag in the upper and hinder part of it, the peritoneum which covers that part muſt follow, and by that means a ſac be formed

for the reception of a portion of gut or caul. Hence the different ſituation of the two herniæ in the ſame ſubject.

While recent, this kind of hernia is eaſily reducible, and may, like the others, be kept within by a proper bandage; but when it is of any date, or has arrived to any conſiderable ſize, the urine cannot be diſcharged, without lifting up, and compreſſing the ſcrotum; the outer ſurface of the bladder is now become adherent to the cellular membrane, and the patient muſt be contented with a ſuſpenſary bag.

In caſe of complication with a bubonocele, if the operation becomes neceſſary, great care muſt be taken not to open the bladder inſtead of th e ſac, to which it will always be found to be poſterior. And it may alſo ſometimes by the inattentive be miſtaken for a hydrocele, and by being treated as ſuch may be the occaſion of great, or even fatal miſchief.

SECTION

tween his brother and me, and from which I did not derive the leaſt degree of information, I am not conſcious of any thing which ſhould incite him to draw his tremendous pen againſt me, or to treat me in ſo illiberal a manner. It is very true that the doctor has been charged with having had a diſpute *with me*; but before he took this ſtrange liberty, ought he not to have recollected, that he never was ſo charged *by me?* and that I am by no means accountable for the uſe which another may make of my name? Ought not the doctor to have aſked me whether I had permitted or approved of it[f]? Surely this was

[f] Although I cannot think that Dr. Hunter's behaviour can intitle him to any explanation from me, yet to prevent any miſconception in the reader, and to give the doctor all poſſible ſatisfaction, I do aſſure him, that when Dr. Monro mentioned my name among others with whom he ſuppoſed Dr. Hunter to be engaged in a diſpute, he did it without any correſpondence, communication, or permiſſion from me, nor did I know any thing of it till I ſaw it in print. That gentleman, I ſuppoſe, among many others, took it for granted, that the remarks which had appeared in the Critical Review, on my pamphlet, were Dr. Hunter's, or publiſhed with his knowledge and approbation, and therefore looked upon him as having begun a diſpute with me. What reaſon they, who have known

was due both to my character, and to his own. Had he thought proper to have aſked me any queſtions relative to my conduct, I would have given him a ſatisfactory anſwer; but this he choſe to avoid, and haſtily taking for granted what was not true, and what he ought coolly to have inquired into, he ſuffered his pride to hurry him into an indecency, very unbecoming a man of ſcience, or a candid inquirer into truth; and (to uſe his own words) *wantonly ſought a diſpute with me.*

Soon after the publication of my pamphlet, ſome remarks were, as I have already obſerved, made on it in the Critical Review[g], which repreſented me in no very advantageous light. Theſe the doctor juſtly obſerves *could not be very pleaſing to me*; and he expreſſes ſome ſurprize that they did not draw from me a juſtification. I believe the whole world, and even the Reviewers themſelves, will allow, that an anonymous writer has no juſt claim to an anſwer.

known Dr. Hunter longeſt, had to ſuſpect him of being capable of publiſhing anonymous reflections on the performance of his *friends*, he and they beſt know.

[g] March and May, 1757.

anſwer. If the obſervations which appeared in that paper were really the doctor's own, (which I have now more than one good reaſon for believing; and which all who read, and will compare them with what has ſince appeared in the Medical Commentary, will, I fear, be convinced of) I ſay, if theſe were the doctor's own, why did he not ſtand forth like a man, and ſign them? why did he hide himſelf behind a feigned and a nameleſs character, and ſtrike at me in the dark? If I had injured, or defrauded him, he had a right to reſent it, and ought to have done it openly: if I had not, and his apprehenſions were merely the reſult of vanity and ſuſpicion, his remarks were ill-founded, and it would have been more prudent to have ſuppreſſed them.

The doctor ſays, that he complained of me at his lecture, and that every one to whom he mentioned the thing was much ſurprized at it. I am really at a loſs to ſay which has been moſt ſurpriſing to me, the doctor's having made ſuch complaint, or his not having been aſhamed to acknowledge it. Why make an appeal to a ſet of people, who could not poſſibly know any thing

thing of the matter, or at leaſt as it related to me? nor whether the complaint was well or ill founded? Why ſhould Dr. Hunter be ſo vain to imagine that his *ipſe dixit*, muſt be implicitly believed by all who heard him? or if he did believe that it would, was it not diſingenuous to make uſe of ſuch influence, and endeavour to ſet me in a contemptible light to his hearers, without having once mentioned the thing to me, or hearing what I had to ſay in my own vindication. If he had ſpoken to me, and I had refuſed giving him a ſatisfactory anſwer; or if I had given him a falſe, or an evaſive one; if I had lived in a country far diſtant from that of his reſidence; if there had been any previous animoſity between us, he might have had recourſe to this unmanly method, and it might poſſibly have been juſtifiable: but as I was at hand; had never received an affront from, or offered one to the doctor; as he had no good reaſon to ſuppoſe me either afraid or aſhamed to have come to any eclairciſſement, which he might have thought proper to have required of me; he muſt give me leave to ſay, (as I always ſhall)

ſhall) that this method of telling his *tale* to the young people at his lecture-room, and of endeavouring to repreſent me to them in a contemptible light, without having previouſly ſpoken to me, was diſingenuous, and equally unbecoming a man of candor, or a man of ſpirit[h]. The doctor might meet with ſome among his pupils, who having heard only his ſtory, might think me blameable; but I can with ſtrict truth aſſure him, that even in that ſmall body of people, there were at that time ſeveral who were diſguſted at the apparent male-

[h] Whoever furniſhed the Critical Review with remarks on my pamphlet (doctor or doctor's pupil) miſled the Reviewers, and was guilty of propagating a falſehood, when he authorized them to tell the publick, that Dr. Hunter had appealed *to me* concerning my conduct. The doctor knows that he never did. In the Medical Commentary, ſpeaking of my erroneous account of the time of the deſcent of the teſtes, and of my ſuppoſed theft from Haller, the doctor ſays, that "the ſubject appeared "to him *too delicate for converſation.*" But tho' it was too delicate for converſation, even with a man whom he dignifies with the reſpectable name of *friend*, yet it did not appear too delicate to be made the ſubject of an anonymous piece of ſatire. What an idea of *delicacy*, as well as of *friendſhip*, does this convey! *Hic nigræ ſuccus loliginis; hæc eſt Æruga mera.*

malevolence of the appeal, and who if they had not been reſtrained *by me*, would have ſpoken to him about it.

An attack made on me without either real foundation, or perſonal provocation, has drawn from me this apology, in which I may poſſibly be thought to have expreſſed myſelf freely, but I hope not rudely: that degree of reſentment which every man may be allowed to feel, when he thinks himſelf ill-uſed, will vindicate the former; and the unwarrantable liberty taken with me, would almoſt excuſe the latter.

As I did neither *wantonly ſeek* this diſpute, nor begin it, ſo having now ſaid all that I know, or think concerning it, I am determined never to write another word on the ſubject; I therefore take my leave of it for ever, aſſuring both Dr. Hunter and his brother, that when I publiſhed my tract on the congenial hernia, I had no intention to anticipate either of them, or to prevent either of them from enjoying any reputation, or honour, which might ariſe to them from their labours on this, or any other ſubject; on the contrary, when I preſent-

ed my firſt treatiſe to the doctor, if he had been ſo friendly as to have hinted to me his ſuſpicion of my having borrowed from Haller; or to have ſaid, that he, or his brother, was then inquiring into that part of the animal œconomy, I would not only have given him a true anſwer to the former, but ſhould moſt probably never have proſecuted my inquiries into the latter, as I ſhould have thereby known that the ſubject was in ſo able hands: I wanted no reputation of that ſort; but as I thought that I had accidentally hit upon a truth in which mankind were not a little intereſted, ſo I thought it my duty to publiſh it. If my account was erroneous, it certainly deſerved correction; but that correction might have been made with civility and candor, not in the manner in which the doctor, or his *nameleſs* pupil attempted it; if I had then been diſpleaſed, the fault would have been mine, and no blame could have juſtly been laid on the corrector. The man who is offended [1] by a civil offer of information, has

[1] I had ſo little ſuſpicion that the contents of my tract on the congenial hernia could poſſibly prove offenſive to Dr. Hunter, that I ſent one of them to him before pub-

 lication,

has more vanity than ſenſe; but he who tacitly and tamely ſubmits to an attempt toward ren dering him contemptible (by whomſoever made) does thereby become ſo.

I beg the reader's pardon, and proceed to give a ſhort account of the diſeaſe, with ſome practical obſervations thereon.

THE manner in which a common hernial ſac is formed, has already in a former chapter been related, viz. by the thruſting forth of a portion of the peritoneum through the opening in the tendon of the external oblique muſcle of the abdomen; which portion ſo thruſt forth, contains a piece of inteſtine, or omentum, or both.

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lication, as to one of my friends to whom I would wiſh to ſhow a civility. I had neither mentioned his name with diſreſpect, nor ſuppreſſed the mention of it, from any ſiniſter motive, but merely from not thinking it neceſſary. If I had ſpoken of him in it in a manner which *could not have been pleaſing* to him, I ſhould have been contented with his meeting with it after it had been publiſhed, and ſhould have thought that by ſending it to him, I had added an *inſult* to an *injury*.

The doctor will give me leave to embrace this opportunity of thanking him for the preſent of his Medical Commentary, which he was ſo obliging as to ſend to me.

A hernial ſac thus formed, always communicates with the cavity of the belly, but never with that of the tunica vaginalis teſtis. It paſſes down anterior to the ſpermatic chord, and when it is laid open, is found to contain only a portion of gut, or caul, and a ſmall quantity of fluid.

On the contrary, the ſac of a congenial hernia is formed by the tunica vaginalis teſtis itſelf; and when it is laid open, (whatever elſe may be in it) it is always found to contain the teſticle, covered only by its proper coat, commonly called tunica albuginea.

The manner in which this is brought about, the original or early ſituation of the teſtes in a fœtus, their deſcent, their protruſion from the cavity of the belly, and the formation of the tunica vaginalis teſtis, I have deſcribed ſo much at large in two tracts already publiſhed, that I ſhall give a very ſhort account of them in this place.

That

[k] An account of the congenial hernia, publiſhed in 1757; and ſome obſervations on the hydrocele, publiſhed in 1762. In Dr. Hunter's Medical Comment, No. 1, may alſo be ſeen a very ingenious account of this matter, by his brother Mr. John Hunter.

That bag which is deſigned to make the future tunica vaginalis teſtis, is an originally formed part, lies in the groin, under the ſkin and adipoſe membrane, and has an orifice always open to the abdomen of a fœtus. By means of this orifice, the teſticle at proper time deſcends, into the groin firſt, and then moſt commonly into the ſcrotum, and when it has been ſome little time in the latter, the opening from the belly generally becomes cloſe, and is obliterated. By the cloſing of this paſſage, a bag or cavity is formed, which contains within it, the teſticle covered only by its tunica albuginea, and which bag never afterward has any communication with the orifice into the cavity of the belly.

The time at which the teſticles are thruſt forth from the belly is very uncertain, as I have often experienced; and ſo is that of the abſolute cloſing of the ſacculus. In ſome they paſs out before birth, in ſome immediately after, and in ſome not till ſome time after. In ſome they never paſs out at all, and in others, they (that is the two) arrive in the groin, or ſcrotum, at different, and ſometimes very diſtant times. In ſhort, the intention of nature, and her proceſs, is

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in general regular and plain, but it is accompliſhed at different periods, in different perſons, and ſometimes, like moſt other parts of the animal œconomy, it is totally prevented by accident, or mal-formation.

The intruſion of a piece of inteſtine, or omentum, into the orifice of the tunica vaginalis is one of theſe accidents. By means of either of theſe, the cloſing of the paſſage is prevented, and a hernial ſac of a particular kind formed. This ſac being really the vaginal coat of the teſtis, muſt if that body has fallen from the abdomen, contain the inteſtine, omentum, or whatever forms the hernia, and the teſticle, in immediate contact with each other.

This is the congenial hernia; a diſeaſe unknown till within theſe few years, but by no means an infrequent one.

The appearance of a hernia in very early infancy, will always make it probable that it is of this kind; but in an adult, there is no reaſon for ſuppoſing his rupture to be of this ſort, but his having been afflicted with it from his infancy; there is no external mark, or character, whereby it

can be certainly diſtinguiſhed from one contained in a common hernial ſac; neither would it be of any material uſe in practice, if there was.

When returnable, it ought like all other kinds of ruptures to be reduced, and conſtantly kept up by a proper bandage; and when attended with ſymptoms of ſtricture, it requires the ſame chirurgic aſſiſtance, as the common hernia.

In very young children, there are ſome circumſtances relative to this kind of rupture, which are very well worth attending to, as they may prove of very material conſequence to the patient.

A piece of inteſtine, or omentum, may get pretty low down in the ſac, while the teſticle is ſtill in the groin, or even within the abdomen; both which I have ſeen. In this caſe, the application of a truſs would be highly improper; for in the latter, it might prevent the deſcent of the teſticle from the belly into the ſcrotum; in the former, it muſt neceſſarily bruiſe and injure it, give a great deal of unneceſſary pain, and can prove of no real uſe. Such bandage therefore ought never to be applied, on a rupture in an infant, unleſs

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the teſticle can be fairly felt in the ſcrotum, after the gut or caul is replaced; and when it can be ſo felt, a truſs can never be put on too ſoon.

As this kind of rupture is ſubject to ſtricture with all its conſequences, as much as that which is contained in a common hernial ſac, and therefore liable to ſtand in need of the chirurgic operation; it may be very well worth an operator's while to know, that an old rupture, which was originally congenial, is ſubject to a ſtricture made by the ſac itſelf, independent of the abdominal tendon, as well as to that made by the ſaid tendon.

Whether this be owing to the weight of the teſticle at the bottom of the ſac, and the endeavours which nature makes to cloſe the upper part of the tunica vaginalis, or to what other cauſe, I will not pretend to ſay, but the fact I have ſeveral times noticed, both in the dead and in the living. I have ſeen ſuch ſtricture made by the ſac of one of theſe herniæ, as produced all thoſe bad ſymptoms, which render the operation neceſſary; and I have met with two different ſtrictures, at near an inch diſtance from each other, in the body of a dead

dead boy about fourteen, one of which begirt the inteſtine ſo tight, that I could not diſengage it without dividing the ſac.

In this kind of hernia I have alſo more frequently found connections and adheſions of the parts to each other, than in the common one; but there is one kind of connection, ſometimes met with in the congenial hernia, which can never be found in that which is in a common hernial ſac, and which may require all the dexterity of an operator to ſet free; I mean that of the inteſtine with the teſticle, from which I have more than once experienced a good deal of trouble.

When a common hernial ſac has been laid open, and the inteſtine and omentum have been replaced, there can be nothing left in it which can require particular regard from the ſurgeon; but by the diviſion of the ſac of a congenial hernia, the teſticle is laid bare, and after the parts compoſing the hernia have been reduced, will require great regard, and tenderneſs, in all the future dreſſings, as it is a part very irritable, and very ſuſceptible of pain, inflammation, &c.

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If a large quantity of fluid ſhould be collected in the ſac of a congenial hernia, and by adheſions and connections of the parts within, the entrance into it from the abdomen ſhould be totally cloſed, (a caſe which I have twice ſeen) the tightneſs of the tumor, the difficulty of diſtinguiſhing the teſticle, and the fluctuation of the fluid, may occaſion it to be miſtaken for a common hydrocele; and if without attending to other circumſtances, but truſting merely to the feel and look of the ſcrotum, a puncture be haſtily made, it may create a great deal of trouble, and poſſibly do fatal miſchief.

By what has fallen within my obſervation, I am inclined to believe that the ſac of a congenial hernia is very ſeldom, if ever, diſtended to the degree which a common hernial ſac often is: it alſo, from being leſs dilated, and rather more confined by the upper part of the ſpermatic proceſs, generally preſerves a pyriform kind of figure, and, for the ſame reaſon, is alſo generally thinner, and will therefore require more attention and dexterity in an operator when he is to open it. To

which

which I believe I may add, that common ruptures, or thoſe in a common ſac, are generally gradually formed, that is, they are firſt inguinal, and by degrees become ſcrotal; but the congenial are ſeldom, if ever, remembered by the patient to have been in the groin only.

SECTION XI.

Exomphalos.

THE Exomphalos, or Umbilical rupture, is ſo called from its ſituation, and has, like the other, for its general contents, a portion of inteſtine, or omentum, or both. In old umbilical ruptures, the quantity of omentum is ſometimes very great.

Mr. Ranby ſays, that he found two ells and half of inteſtine in one of theſe, with about a third part of the ſtomach, all adhering together.

Mr. Gay, and Mr. Nourſe found the liver in the ſac of an umbilical hernia; and Bohnius ſays that he did alſo.

But whatever are the contents, they are originally contained in a ſac, formed by the protruſion of the peritoneum.

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In recent, and ſmall ruptures, this ſac is very viſible; but in old, and large ones, it is broken through at the knot of the navel, by the preſſure and weight of the contents, and is not always to be diſtinguiſhed, which is the reaſon why it has by ſome been doubted whether this kind of rupture has a hernial ſac or not.

Infants are very ſubject to this diſeaſe, in a ſmall degree, from the ſeparation of the funiculus; but in general they either get rid of it as they gather ſtrength, or are eaſily cured by wearing a proper bandage. It is of ſtill more conſequence to get this diſorder cured in females, even than in males, that its return when they are become adult, and pregnant, may be prevented as much as poſſible; for at this time it often happens, from the too great diſtention of the belly, or from unguarded motion when the parts are upon the ſtretch. During geſtation it is often very troubleſome, but after delivery, if the contents have contracted no adheſion, they will often return, and may be kept in their place by a proper bandage.

If ſuch bandage was always put on in time, and worn conſtantly, the diſeaſe might in general be kept within moderate bounds, and ſome of the very terrible conſequences which often attend it might be prevented. The woman who has the ſmalleſt degree of it, and who from her age and ſituation has reaſon to expect children after its appearance, ſhould be particularly careful to keep it reſtrained.

In ſome the entrance of the ſac is large, and the parts eaſily reducible; in others they are difficult, and in ſome abſolutely irreducible. Of the laſt kind many have been ſuſpended for years in a proper bag, and have given little or no trouble. They who are afflicted with this diſorder, who are advanced in life, and in whom it is large, are generally ſubject to cholics, diarrheas, and if the inteſtinal paſſage be at all obſtructed, to very troubleſome vomitings[1]. It therefore behoves ſuch to take great care to keep that tube as clean and free as poſſible, and neither to eat or drink any thing likely to make any diſturbance in that part.

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[1] On which account they are often ſuppoſed to labour under a ſtricture of the inteſtine, when they really do not.

The cure, as propoſed by authors, is either radical, or palliative.

Celſus, Paulus Ægineta, Albucaſis, Aquapendens, Guido, Severinus, Rolandus, and others, mention a radical cure by ligature; Fab. ab Aquapendente propoſes, "aut medicamentis aut ferro umbilicum "adurere;" but after having deſcribed both methods, he lays them under ſuch reſtraints, from age, habit, ſize of the tumor, time of the year, &c. as amounts almoſt to a prohibition againſt putting them in practice at all; and it is to be hoped that no body will attempt to revive them.

The methods by ligature are two; in the one, the ſkin covering the tumor is to be lifted up with the finger and thumb, or with a ſmall hook, to free it from the inteſtine underneath, and then a ligature is to be made round the baſis of the tumor, ſo ſtrict as to procure a mortification of all that part which is anterior to ſuch ligature. In the other, the ſkin is to be elevated in the ſame manner, and a needle, armed with a double ligature, is to be paſſed through the baſis of the tumor, which

is

is to be tied above and below, or on each ſide, ſo tight as to produce the ſame effect. Previous to the drawing the ligature cloſe, it is adviſed to make a ſmall inciſion in the top of the tumor, large enough to paſs in the end of the fore-finger, and with it ſo to depreſs the inteſtine, or omentum, as to prevent their being engaged in the ſtricture.

The intention in both theſe methods, is the ſame, viz. by deſtroying the lax ſkin covering the top of the tumor, to produce a cicatrix which ſhall bind ſo tight, as to reſtrain the parts from any future protruſion.

The objections to either of them are ſo obvious, that it is hardly neceſſary to ſay any thing concerning them; though in this age of quackery and credulity, I ſhould not wonder to ſee them revived, and practiſed.

In young ſubjects, and ſmall herniæ, a bandage worn a proper time, generally proves a perfect cure; and in old perſons, and large tumors, it is hardly to be ſuppoſed that any body can think of any but a pal-

a palliative cure, the hazard of producing a mortification being ſo great.

But ſuppoſe the ſubject to be young, and the tumor of ſuch ſize, and in ſuch ſtate, as to make it unlikely that a bandage would do more than palliate; that the ſkin covering the tumor is ſo lax, as to make it improbable that it ſhould ever recover its former ſtate, and lie ſmooth, and that when it has been removed, the cicatrix ſhall bind ſo tight, as to prevent the future protruſion of any of the contained parts; yet who can tell what may be the conſequence of this deſtruction of parts, and this indilatibility of the ſkin in a ſtate of pregnancy. I mention this becauſe I have ſeen very terrible miſchief, from the burſting of a cicatrix on the navel, during geſtation; though the ſcar was from an abſceſs, opened by inciſion, and conſequently could not be ſuppoſed to be equal, either in ſize or reſiſtance, to one produced by the before-mentioned operation.

The umbilical, like the inguinal hernia, becomes the ſubject of chirurgic operation, when the parts are irreducible, by the hand

only, and are so bound as to produce bad symptoms. But though I have in the inguinal and scrotal hernia, advised the early use of the knife, I cannot press it so much in this; the success of it is very rare, and I should make it the last remedy. Indeed I am much inclined to believe, that the bad symptoms, which attend these cases, are most frequently owing to disorders in the intestinal canal, and not so often to a stricture made on it at the navel, as is supposed. I do not say that the latter does not sometimes happen, it certainly does; but it is often believed to be the case when it is not.

When the operation becomes necessary, it consists in dividing the skin and hernial sac, in such manner as shall set the intestine free from stricture, and enable the surgeon to return it into the abdomen, if sound, and not adherent; but if it be gangrenous, or mortified, the altered part must be removed, and the fæcal discharge be derived through the wound; by which means, some few have preserved their lives, if such state can be called living.

SECTION

SECTION XII.

Ventral Hernia, &c.

THIS may appear in almoſt any point of the fore-part of the belly, but is moſt frequently found in or between the recti muſcles.

The portion of inteſtine, &c. is always contained in a ſac, made by the protruſion of the peritoneum. When reduced, it ſhould be kept in its place by bandage, and if attended with ſtricture, which cannot otherwiſe be relieved, that ſtricture muſt be carefully divided.

The hernia Foraminis Ovalis, I have never ſeen.

All the parts almoſt which are contained in the belly, or pelvis, are by the dilatation of their connecting membranes, capable of being thruſt forth, and of producing ſwellings, all which are called herniæ.

Ruyſch gives an account of an impregnated uterus being found on the outſide of the abdominal opening; and ſo does Hil-

danus and Sennertus. Ruyſch alſo gives an account of an intire ſpleen having paſſed the tendon of the oblique muſcle. And I have myſelf ſeen the ovaria removed by inciſion, after they had been ſome months in the groin.

The urinary bladder is alſo liable to be thruſt forth, from its proper ſituation, either through the opening in the oblique muſcle, like the inguinal hernia, or under Poupart's ligament, in the ſame manner as the femoral.

This is not a very frequent ſpecies of hernia, but does happen, and has as plain and determined a character as any other.

It has been mentioned by Bartholin, T. Dom. Sala, Platerus, Bonetus, Ruyſch, Petit, Merry, Vardier, &c. in one of the hiſtories given by the latter, the urachus, and impervious umbilical artery on the left ſide, were drawn through the tendon into the ſcrotum, with the bladder: in another he found four calculi.

Ruyſch gives an account of one complicated with a mortified bubonocele. Mr. Petit ſays he felt ſeveral calculi in one, which

Haller) have said that I had robbed them of what was their own original property? surely not: and yet (to return some part of my *friend's tender concern* for me) I am sorry to say, that one of his complaints against me, seems to imply that he would.

The last part of the doctor's charge against me, and which he has put in italics, lest an inattentive reader should overlook it, is, that my tract bore in its composition the evident marks of *second-hand observation*, and of *time-serving hurry*.

The elegance and gentility of this language are so obvious, as to need no remark; and I dare believe that every reader, who has either ear, or taste, would have attended to it without the change of type. The doctor is a good-natured man, and only wishes to correct the errors of his friends, without hurting or offending them by his manner of doing it; and as I cannot help thinking myself under some obligations of this kind to him, I am sorry that in this instance, in which he has strained his imagination for a choice phrase, and has taken particular care to engage the reader's attention to it, I should be under a necessity of saying that it conveys a re-

flection which is unjuſt, and not founded on truth: but baron Haller's Opuſcula having been publiſhed before my pamphlet, could not be anticipated by it; and as I had not the leaſt intimation that either Dr. Hunter or his brother, or indeed that any body intended to write on the ſubject, I muſt take the liberty of repeating, that the epithet *time-ſerving*, altho' it be a very expreſſive one, and one whoſe *uſe* and *importance* I am very willing to allow the doctor to be perfectly well acquainted with, is applied in this inſtance without truth or juſtice, and only ſerves to prove how apt we are to make our own conduct the rule whereby to judge of that of others.

Whoever has read that chapter of the Medical Commentary which relates to me, and has attended to the ſneer in ſome part of it, and the acrimony in others, muſt neceſſarily ſuppoſe that my conduct, with regard to Dr. Hunter, has been ſuch, as to deſerve this kind of treatment; eſpecially when they recollect that it comes from a gentleman, whoſe appearance is all mildneſs and modeſty; but excepting that ſingle circumſtance of not having related the ſhort converſation which paſſed between

SECTION XIII.

Attempts toward a radical Cure.

IN the firſt ſection of this treatiſe, I have ſaid that the means uſed to obtain both a palliative and a radical cure were exactly the ſame, and that the event was dependent on many circumſtances, which a ſurgeon could neither direct nor alter; ſuch as the age of the patient, the date of the rupture, the thickneſs of the hernial ſac, the ſize of the abdominal openings, &c.

They who are unacquainted with the hiſtory of this diſeaſe, may poſſibly be ſurpriſed at this aſſertion, and be thereby induced to believe, what has in all times been ſo confidently aſſerted, viz. that there are methods and medicines, whereby this diſeaſe may always be perfectly cured, and that the ſurgeons, either through indolence, will not get information of them, or through obſtinacy will not practiſe them. If either of theſe charges was true, it muſt

be the latter, for we certainly do know what attempts of this kind have been made; and if any of theſe means had really deſerved the character which has been given of them, had been ſafely practicable, or had proved generally ſucceſsful, I ſhould certainly have ſpoken of them in their proper place: but this is ſo far from being the caſe, that on the contrary, however they may have been applauded by a few individuals, they have upon repeated experiment been found unfit for general practice, being either totally inefficacious, or painfully miſchievous. The majority, nay, almoſt all they who have ſubmitted to, or tried them, have remained uncured of their diſeaſe, or have been mutilated, or murdered in the attempt.

Several of theſe methods have indeed the ſanction of antiquity, and have been deſcribed, and even practiſed by many of the old ſurgeons: the principal of theſe, or they which are moſt worthy of notice, are the *cure by cautery*; *the cure by cauſtic*; *that by caſtration*; *the punctum aureum*; *the royal ſtitch*; *and the cure by inciſion*.

In

In Avicenna, Albucaſis, Paulus Ægineta, Fab. ab Aquapendente, Guido de Cauliaco, Severinus, Theodoric, Rolandus, Serjeant Wiſeman, and others, will be found the *cure by cautery*, which is performed as follows.

After a proper time ſpent in faſting and purging, the patient muſt be put into an erect poſture, and by coughing, or ſneezing, is to make the inteſtine project in the groin as much as poſſible; when the place, and circumference of ſuch projection is to be marked out with ink. Then the patient being laid upon his back, the inteſtine is to be returned fairly into the belly, and a red-hot cautery is to be applied according to the extent of the marked line. For this purpoſe, cauteries of different ſizes, ſhapes, and figures, have been deviſed; annular, elliptical, circular, like the Greek letter Gamma, &c. The writers who have given an account of this operation, have differed a good deal from each other, not only in the ſize and figure of the cautery, but in the depth of its effect. Some have directed it to be repeated, ſo as to denude the os pu-

bis; others direct that the ſkin only be deſtroyed by the iron; the cellular membrane, ſac, perioſteum, &c. with repeated eſcharotic applications. But in all of them the exfoliation[p] of the bone is made a neceſſary part of the proceſs; the eſchar, and ſloughs, being ſeparated, and the exfoliation caſt off, the patient is ordered to obſerve an extremely ſtrict regimen, to lie on his back during the cure, and to wear a bandage for ſome time after, in order to prevent a new deſcent of the parts, which notwithſtanding all the pain, and all the hazard the patient had undergone, he was ſtill liable to.

The cure by cauſtic ſeems to have ſucceeded to that by cautery, and is deſcribed by moſt of the ſame writers, particularly by Guido, Severinus, Lanfranc, Parey, Theodoric, Scultetus, &c.

The

[p] Albucaſis ſays, "Et ſcias quod quando tu non conſequeris os cum cauterio, non confert operatio tua."

Rolandus orders the cautery to be uſed in the ſame manner; ſo do Guido, Theodoric, &c.

Brunus ſays, "Si non fuerit os conſecutum, in primâ vice, tunc itera cauterium vice aliâ, donec conſequeris; quia ſi non conſecutum fuerit os, cum cauterio, parum confert operatio tua.

The patient being laid on his back, and the parts returned into the belly, a piece of cauſtic is to be applied on the ſkin, covering the opening in the abdominal tendon, ſo large as to produce an eſchar, about the ſize of a half crown.

Some ſuffer this eſchar to ſeparate, others divide it, and then by the repeated applications of eſcharotics, deſtroy the membrana cellularis, with as much of the hernial ſac as can be done, without injuring the ſpermatic veſſels. For this purpoſe, different kinds of corroſive applications have been made uſe of: paſtes loaded with ſublimate, or arſenick; the ſtirpes braſſicæ, burnt; the tithymalus; the lapis infernalis alone, or with ſuet and opium; oil of vitriol, with many others, according to the humor of the operator. But though the means are ſomewhat different from each other, the end or intention in the uſe of them all is the ſame, viz. to remove or deſtroy the ſkin, and cellular membrane, covering the tumor, together with a part of the hernial ſac, and by that means to procure ſuch an incarnation, as by its firmneſs, and its attachment to the bone, and

parts

parts adjacent, ſhall prevent a new deſcent of either gut or caul.

The mere relation of one of theſe methods is ſufficient to ſhock any humane, or ingenious man. The horror attending the uſe of the cautery muſt be great, to ſay nothing of the extreme uncertainty of the ſize or depth of the eſchar; the apprehenſion from the cauſtic will be leſs indeed, but the pain muſt be nearly as great, and of much longer duration.

The parts to be deſtroyed are, as I have juſt ſaid, the ſkin, the membrana adipoſa, part of the hernial ſac, and the perioſteum covering the os pubis; and this is to be accompliſhed without injuring the ſpermatic veſſels, or the tendon of the abdominal muſcle.

If the ſpermatic veſſels are hurt, an inflamed or diſeaſed teſticle will be the conſequence; if they are deſtroyed, the teſticle will become uſeleſs. If the tendon of the oblique muſcle be injured, either by the iron, or by the cauſtic, terrible ſloughs, a large ill-conditioned ſore, and a briſk ſymptomatic fever muſt be expected, which in ſome habits muſt be productive of conſiderable

ſiderable miſchief: and that conſiderable miſchief was often done by theſe proceſſes, may be learned from the very writers who deſcribe them [q].

If

[q] Guido ſpeaking of the cure by cauſtic ſays, "In quo "ſumme cavendum eſt quod dominus ſit de corroſivo; "ſi enim indocte applicatur, febrim commovet, et acci- "dentia mala." That great pain, defluxion on the hæmorrhoidal veſſels, and inflammation and ſwelling of the ſcrotum, were often the conſequence of theſe attempts, may be learned from the ſame author, who, ſpeaking of the method of applying the cauſtic, ſays, "Et ita con- "tinue fiat quouſque caro miracis tota ſit corrupta, uſque "ad Didymum quod cognoſcitur per inflationem burſæ, "et teſticulorum." And that the cauſtic has gone deep enough, he gives the following proof, "Quod cognoſ- "cetur per majorem tumorem teſticuli, et per majo- "rem dolorem dorſi et partium poſteriorum." Brunus ſays, "Et cave ſummâ diligentiâ, ne in horâ cauteriza- "tionis exeat inteſtinum, et comburatur." Lanfranc, ſpeaking of the ill effect of the cauſtic in ſome habits, ſays, "Et ſic multi ſpaſmantur, et ſpaſmati ſubito mo- "riuntur." Fab. ab Aquapendente ſays, "Quæ tamen "chirurgiæ uti videtis, difficiles admodum ſunt, et inter "ſubtiliſſimas haberi poſſunt; quo fit ut plerique pa- "tientes affectus perpetuo geſtare quam his chirurgis "ſubmittere ſe vellent." And in another place, "Quæ "porro chirurgiæ vehementem dolorem afferunt et ſatis "difficiles ſunt." In ſhort, whoever will take the trouble of reading the old writers on this ſubject will, even from their own account, be ſatisfied, both of the pain, hazard, and inefficacy of all theſe methods.

If the os pubis be laid bare, whether by cautery, or by cauſtic, ſome of the before-mentioned hazards muſt be incurred; if it be not, the intention will in general be fruſtrated; that is, the inteſtine will ſlip down behind the ſcar, and put the patient under the ſame neceſſity of wearing a bandage, as he lay under before he ſubmitted to ſo painful and ſo hazardous an experiment.

If the preſervation of life was the object of theſe means, ſomething might be ſaid in their vindication; the anceps remedium muſt for ever be preferable to deſperation; but that is not the caſe; they are recommended to be put in practice, when the patient's life is in no kind of danger, and are deſigned merely to ſave him the trouble of wearing a truſs; which purpoſe they can ſeldom anſwer; for it is well known, that after the uſe of the cautery, cauſtic, and every method, either propoſed for a radical cure, or uſed to reſcue a ruptured patient from death, that the inteſtine will ſlip down behind the cicatrix, and form a new bubonocele, which can only be kept up by a proper bandage.

The

The three other means made uſe of by the antients toward obtaining a radical cure, were the *punctum aureum*, the *royal ſtitch*, and *caſtration*.

The *punctum aureum* was performed as follows. The inteſtines being emptied by purging, and the hernia reduced, an inciſion was made thro' the ſkin, and membrana adipoſa, down to the ſpermatic proceſs. This inciſion was to be of ſuch length, as to permit the operator, either with his finger, or with a hook to take up the ſaid proceſs, and to paſs a golden wire under it; which wire was to be twiſted in ſuch a manner, as to prevent the inteſtine from ſlipping down again into the hernial ſac, but not ſo tight as to intercept or obſtruct the circulation of the blood to the teſticle. Some operators preferred a leaden wire to a golden one, and others a ſilken ligature.

It may poſſibly ſeem rather uncivil to ſay, that both this and the ſucceeding operation were directed and practiſed by people who were very little acquainted with the true nature and ſtructure of the parts they operated upon, or indeed of the diſeaſe,

caſe, for which they preſcribed ſuch operation; but had not that been the caſe, they never could have propoſed ſo fallacious and uncertain a method of treating it: for if the wire, or whatever was paſſed round the proceſs, did not bind pretty tight, it would not prevent a deſcent of the gut, and the whole operation, though painful and irkſome, muſt become abſolutely uſeleſs; if it did bind tight, it muſt neceſſarily retard or obſtruct the circulation of the blood thro' the ſpermatic veſſels, and produce a diſeaſe of them, and of the teſticle [r].

The royal ſtitch was performed in this manner: the inteſtines being emptied, and the portion which had deſcended being replaced, an inciſion was made in ſuch manner, as to lay bare the ſpermatic chord, about two inches in length from the abdominal opening downward. When the proceſs was freed from the cellular membrane, it was to be held up by an aſſiſtant, while

[r] Whoever would know the particular methods of executing this operation, may find them in Guido, Parey, Franco, Scultetus, Smaltzius, Purmannus, Nuck, &c.

while the ſurgeon with a needle and ligature made a continued ſuture, from the lower part of the inciſion to the upper, in ſuch manner as to unite the divided lips of the wound again, comprehending the cellular membrane, and thereby endeavouring to ſtraiten the paſſage, as they called it, from the belly into the ſcrotum, without injuring the ſpermatic veſſels.

The operation is deſcribed by many of the old writers[t], with ſome ſmall variation from each other, both in the manner, and in the inſtruments; but all tending to the ſame end, and all proving that their idea of the diſeaſe, and of the parts affected by it, were erroneous and imperfect.

The fatigue to the patient muſt be greater in this than in the preceding operation, both on account of the large inciſion, and of the ſuture.

In ſome habits either of them muſt be very hazardous, and in the majority of caſes,

[t] Paulus, Albucaſis, Fab. ab Aquapendente, Guido, Rolandus, Parey, Serjeant Wiſeman, &c. &c. &c.

caſes, painful, troubleſome, and tedious; which circumſtances might nevertheleſs be ſubmitted to, if the cure was certain, the contrary to which did moſt frequently happen, even by the confeſſion of the very writers who propoſe and deſcribe theſe methods, and who univerſally order the long wearing a truſs after ſuch operations have been ſubmitted to.

Some, who thought that the ſtitch added unneceſſarily to the pain, have directed the inciſion to be made in the ſame manner as for the future; but inſtead of ſewing the lips together, have adviſed that the common membrane be diſſected out pretty clean, and the ſore digeſted and incarned. This is ſo like to the operation for the incarcerated bubonocele, both in the manner of making the inciſion, and in its conſequence, as tending toward a radical cure, that it may be looked upon as really the ſame thing; and how very fallacious and uncertain that operation proves toward anſwering this end is too well known.

Both theſe, the *royal ſtitch*, and the *punctum aureum*, proved often deſtructive

to the teſticle, even in the moſt judicious hands, and when it got into thoſe of ignorant pretenders, it proved moſt frequently ſo; for not knowing how to perform properly what they had undertaken, and finding it much more eaſy, after the inciſion was made, to ſlip out the teſticle, they moſt commonly did ſo.

Theſe are the principal methods propoſed, or practiſed by our forefathers for a radical cure of a rupture; among the writers indeed will be found ſome trifling variations from each other in the execution of them, but the intention and aim is the ſame in all, viz. to prevent a new deſcent of either gut or caul, by producing an union of the parts, through which they either did, or were ſuppoſed to paſs. According to the degree of anatomical knowledge, and humanity of the propoſer, they will be found to be more or leſs rational and gentle, but are all of them painful, hazardous, and moſt frequently fallacious, and have therefore been totally diſuſed by all modern practitioners, who have either knowledge, compaſſion, or honeſty.

No diſeaſe has ever furniſhed ſuch a conſtant ſucceſſion of quacks as ruptures have; they who have had ſome ſmattering of anatomy or ſurgery, and whoſe humanity has not been their prevailing quality, have adopted one of the preceding operations, or ſomething like them; while they who have had leſs knowledge, and more timidity, have had recourſe to the more ſneaking knavery of ſpecific applications.

The hiſtories of prior Cabriere, Bowles, Sir Thomas Renton, Dr. Little John, &c. &c. &c. to be found in Dionis, Houſton, and other writers, will furniſh to the reader an idea of the practice and performances of ſome of thoſe who have ſtood at the head of thoſe bold promiſers: and our preſent news-papers daily ſupply us with a number of the leſſer dealers in ſpecific medicines, and new-invented bandages, by which the poor, and credulous, are gulled out of what little money they can ſpare. Operative quackery is not indeed ſo frequent, or ſo readily ſubmitted to; but I wiſh I could not ſay that more than one life

life had not been deſtroyed in our own time, by attempts to form and ſupport the character of an operator in this diſeaſe; to this kind of hazard indeed the poor are luckily not ſo liable, as it can only be worth the while of theſe rupture-doctors to murder thoſe who have before-hand been ſimple enough to pay them well for it.

This is a ſubject in which mankind are much intereſted, and on which a good deal might be ſaid; but as an honeſt attempt to ſave the afflicted from the hands of thoſe who have no character to loſe, and whoſe only point is money, might, from one of the profeſſion be miſconſtrued into malevolence and craft, I will not enter into it, but ſhall conclude, by wiſhing, that they who have capacity to judge of theſe matters, (which are as much the objects of common ſenſe, as any other kind of knowledge) would not ſuffer themſelves to be deluded by the impudent aſſertions of any Charlatan whatever, but determine in this as they do in many other things, that is, by the event. In ſhort, if they who have ſo much credulity, as to be inclined

clined to believe, and truſt theſe lying impoſtors, would only defer the payment of them till they had completed their promiſes, the fallacy would ſoon be at an end.

F I N I S.

The Reader is desired to correct the following Errata.

Page 5, l. 14, for *edges* read *edge*.
Page 17, l. 5, for *Epidydimus* read *Epidydimis*.
Page 34, l. 12, dele the second *of*.
Page 47, l. 24, for *even the* read *even of the*.
Page 49, l. 1, for *the* read *that*.
Page 54, l. 2, dele *the*.
Page 77, l. 8, for *late* read *too late*.
Page 83, l. 7, for *parts which bound it* read *the part which was bound*.
Page 87, l. 7 of the note, read *more properly*.
Page 118, l. 8, for *lie* read *lay*.
Page 138, l. 19, for *them* read *it*.
Page 142, l. 20, for *membranorum* read *membranarum*.
Page 145, l. 24, for *shewed* read *showed*.

AN

ACCOUNT

OF A

PARTICULAR KIND

OF

RUPTURE,

Frequently attendant upon

NEW-BORN CHILDREN;

And ſometimes met with

IN ADULTS;

VIZ.

That in which the INTESTINE, or OMENTUM, is found in the ſame Cavity, and in contact with the TESTICLE.

By *PERCIVAL POTT*,

Senior Surgeon to ST. BARTHOLOMEW'S HOSPITAL.

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16214

A N

A C C O U N T

Of a particular

KIND of RUPTURE.

SECT. I.

IN performing the operation for what is called a Strangulated Rupture, the portion of inteſtine, or omentum, which had paſſed out from the abdomen, has ſometimes been found in the ſame cavity, and in contact with the naked teſticle.

THIS is a caſe which has been mentioned by one or two late writers, who have ſuppoſed it to be produced by a

breach, or laceration, of that production of the peritoneum, which formed the hernial ſac, and contained the portion of inteſtine, or omentum, when firſt it paſſed out from the belly.

In order to underſtand rightly the kind of rupture, which makes the ſubject of my preſent inquiry, it may be neceſſary to premiſe a general deſcription of the more frequent ſpecies of inteſtinal and omental rupture, and to ſhew wherein conſiſts the eſſential difference between theſe and that.

The portion of inteſtine or omentum, which by being thruſt forth from the cavity of the belly, forms a common rupture, is contained in a firm, ſtrong, membranous pouch or bag, called the hernial ſac: this ſac is formed by a production of the peritoneum, puſhed out by the inteſtine, *&c.* through the opening in the tendon of the obliquus deſcendens muſcle of the abdomen, paſſing

ſing in ſome no lower than the groin, in others into the lower part of the ſcrotum.

The peritoneum, of which this ſac is formed, is extremely dilatable, as pregnancy, dropſy, and many diſeaſes prove; and inſtead of ſeeming thereby in danger of burſting, is frequently found to become thicker and ſtronger in proportion to its diſtention.

In this ſac are contained a portion of inteſtine, or omentum, (or both) and a ſmall quantity of a fluid; the ſpermatic veſſels paſs down behind it, and its cavity is perfectly diſtinct from, and has no communication with, that ſacculus in which the teſticle is generally included.

This is a ſuccinct account of a common inteſtinal or omental rupture; but in that which makes my preſent ſubject, the inteſtine or omentum, or both, are found in the ſame bag, and in contact with the naked teſticle.

They who ſuppoſe this to be produced by a breach, or laceration of the peritoneum, ſuppoſe alſo that the inteſtine, *&c.* paſſed out from the abdomen in a hernial ſac, formed in the uſual manner; that this ſac originally compoſed a cavity perfectly diſtinct from that in which the teſticle was included (called tunica vaginalis teſtis); but that by ſome means this ſac ſuffers a breach or laceration, that the membrane which divides the tunica vaginalis teſtis, from the tunica vaginalis of the chord, is broke through alſo, and that by this means the inteſtine and teſticle are brought into contact with each other in the ſame common cavity.

By this means the ancient doctrine of a hernia cauſed by breach or rupture of the peritoneum, is revived, though the diſſection of the parts has always proved it to be untrue; the peritoneum forming a hernial ſac, whatever ſize it may be

diſtended to, being always found entire, unleſs it has been wounded, or is mortified.

RUPTURES attended with that particular circumſtance which brings them under the deſcription mentioned in the Title, are ſaid to be very rare; but, from what I have obſerved, both in the living, and in the dead, I am inclined to believe that they happen much oftner to adults, than they are ſuſpected to do.

WHEN I publiſhed my *General Treatiſe on Ruptures*, I had not enough conſidered this particular kind, to be able to ſay any thing poſitive concerning it; I thought the breach of the peritoneum highly improbable, and from what I had ſeen of the caſe, was ſure that it muſt be owing to ſome other cauſe; but, as I was not perfectly ſatisfied what that was, I did not chuſe to aſſert any thing about it, and ſpoke of it as a thing not frequent, and produced by accident.

SINCE

SINCE that time I have ſought for, and found many opportunities of inquiring into this matter, and of verifying what was then only probable conjecture? I have with great care examined a variety of ſubjects, and flatter myſelf that I have traced the diſeaſe to its true cauſe. The anatomy of the parts appeared to me as I ſhall repreſent it in the following pages, and all the deductions, and inferences which I ſhall make from them, are ſuch as appear to me to be natural, and true, and ſuch as place the origin of this kind of rupture in a clear light.

SECT.

SECT. II.

THE diſeaſe of which I am about to ſpeak, though ſometimes met with in adults, is moſt certainly firſt produced in early infancy; and, as I apprehend it to ariſe from the natural ſtructure and diſpoſition of ſome parts of the child while it is yet unborn, I ſhall begin with a ſhort account of theſe parts during the reſidence of the fœtus in the uterus.

THE parts which I mean, are, the ſpermatic veſſels, the teſticles, and epididymis, a part of the peritoneum, the aperture in the abdominal muſcle, and the ſcrotum.

BY diligently obſerving the ſtructure, diſpoſition, and connexion of theſe in ſo early a ſtate as that of a fœtus of five or ſix months; and by following them in their growth and progreſs, to that of an

an infant; ſuch information may (I think) be obtained, as will fully and clearly illuſtrate the preſent matter.

THE teſticles of all children are originally formed and lodged in the cavity of the belly; they remain there till the child is born, or till very near that time; and paſs out from thence, each through an opening which leads into the groin; here they generally remain ſome little time; more or leſs in different ſubjects, and at laſt deſcend into the ſcrotum, where they are ſuſpended partly by their own veſſels, and partly by the general attachment and connexion of the membranes, *&c.* which include them. The diſpoſition of the teſticle, and of its appendix the epididymis, while they remain in the abdomen of a fœtus, their connexion with each other, and with other parts, their progreſs toward the opening by which they paſs out, their determination to that opening, and the ſtructure and diſpoſition of the parts ap-

appointed for their reception both immediate, and future, are circumſtances, which, if properly attended to, will lead us not only into a knowledge of the parts themſelves, but of other matters of no ſmall conſequence in the animal œconomy.

When I ſay that the teſticles are lodged in the cavity of the abdomen, I muſt deſire not to be miſunderſtood, as if I meant to ſay that they were within the peritoneum; they certainly are not, but are within the cavity of the belly, in the ſame manner as the inteſtines, and ſome other parts are, which, ſtrictly ſpeaking, are behind the peritoneum; but they are ſo looſe, and ſo dependent from a kind of ſtalk, formed by the inſertion of the ſpermatic veſſels into them, and project ſo much into the cavity of the abdomen, as to ſeem within it—and in one ſenſe are ſo.

Their ſituation is not ſo very preciſe, as not to vary a little ſometimes; but

the moſt frequent is ſome way below the kidney, pretty near parallel to the upper part of the urinary bladder as it is upheld by the urachus, &c. and reſting upon the pſoas muſcle. The ſpermatic veſſels lie behind the peritoneum enveloped in the membrana cellularis, and the body of the teſticle projecting into the abdomen is looſe and moveable from that pedicle formed by the inſertion of the ſpermatic veſſels into it; it is of an oblong figure, and its greateſt length is upward and downward: The epididymis lies ſtretched out behind the teſticle, in the ſame direction—that is upward and downward.

The inferior part of each epididymis is extended downwards, and inſinuates itſelf into a ſmall orifice toward the lower part of the belly, almoſt oppoſite to the aperture in the tendon of the abdominal muſcle.

If the teſticle be held aſide, and the epididymis be moderately ſtretched, this

orifice will become very viſible, and the extremity of the epididymis will be ſeen entering into it.

By this orifice I have ſeveral times, without force or breach, paſſed a very ſmall probe into the groin; the probe always paſſed through the aperture in the tendon of the abdominal muſcle, and upon dividing the ſkin, ſeemed to be covered by, or enveloped in, a ſmall membranous pouch, or ſacculus, made by a protruſion of the peritoneum.

In ſome I have traced this little ſacculus through the opening in the muſcle, (which it always paſſed) into the upper part of the groin, and always found it to be a continuation of that part of the peritoneum which lines the muſcles of the abdomen.

That extremity of the epididymis, which paſſes into the mouth of this little ſacculus is attached, or adherent

to the inſide of it, in ſuch maner, that though the teſticle is ſo looſe at the inſertion of the ſpermatic veſſels as to permit very free motion from ſide to ſide, yet if either it, or the ſpermatic veſſels, be pulled ſtrait upward, toward the kidney, this adheſion will be found to detain it from going higher, unleſs the epididymis breaks, which a ſmall degree of force will effect, it being very tender.

While the teſticles continue in the abdomen they are always naked, that is, they are not enveloped in that looſe bag in which they are conſtantly found when in the ſcrotum, called tunica vaginalis teſtis.

As the fœtus increaſes in ſize and advances towards maturity, the teſticles proceed lower down, and approach nearer to the openings in the abdominal muſcle; and if they have not paſſed out juſt before the birth (which is ſometimes the caſe) the diſtention of the lungs and

thorax

thorax by the air, and the action of the muſcles of reſpiration, ſoon puſh them forth from the belly, through the muſcle, into the groin.

THE ſafe and certain paſſage of the teſticles from the abdomen into the ſcrotum, is a circumſtance of great conſequence; and, like every other part of the animal œconomy, is provided for, and executed with ſuch order and beauty, as to beſpeak its great director.

I HAVE already taken notice, that on each ſide, of the lower part, of the inſide of the cavity of the belly, was a ſmall opening; that in many ſubjects I could, without force or breach, paſs a ſmall probe, by means of this orifice, through the aperture in the tendon of the abdominal muſcle; and that the probe, when thus paſſed, appeared to be enveloped in a very ſmall membranous ſacculus, formed by a production of the peritoneum.

By this means a proper and convenient receptacle for the teſticle is provided, and kept ready for it in due time.

In moſt of the fœtus's which I have examined, it has appeared to me that theſe little ſacculi were parts originally formed; but whether it is conſtantly and invariably ſo, I will not pretend to ſay: Nor indeed is it of much conſequence to my preſent purpoſe, whether they are conſtantly ſo, or not; for the event will be exactly the ſame, whether ſacculi are formed by a production of the peritoneum paſſing through the tendinous aperture in the abdominal muſcle, and placed ready to receive the teſticle when it ſhall be puſhed through; or whether this tendinous opening is looſely covered by a membrane, ſo very dilatable, as to give way to any impulſe, and paſs out before the body which is puſhed againſt it.

In either caſe the teſticle, as ſoon as it has paſſed the opening in the muſcle, will be found inveloped in a ſacculus, formed by a production of the peritoneum, the upper part of which ſacculus paſſes through the muſcle, and communicates with the cavity of the abdomen by an orifice, patent, and viſible.

This the mere examination of the fœtus makes to appear highly probable; but its truth is, I think, proved inconteſtably (at leaſt with regard to the *effect*) by the following facts.

1. That the Teſticles of almoſt all Children, though originally formed and lodged within the belly, yet ſooner or later after their birth, are found either in the groin, or in the ſcrotum; that is, they are found on the outſide of the abdominal muſcle.

2. That

2. THAT the ſcrotum has no communication with the cavity of the abdomen, but through the mouths or entrances of the membranous ſacculi in which the teſticles are included.

3. THAT when the teſticles are got into the groin, or ſcrotum, by having paſſed through the aperture in the tendon of the abdominal muſcle, they are always found enveloped in a looſe membranous bag, in which they were not contained while they were within the belly.

4. THAT the entrances from the abdomen into theſe ſacculi containing the teſticles, are generally to be ſeen open in a new born child. And,

5. THAT by laying theſe ſacculi open, the teſticles are found within them naked;

naked;—that is, they are found in the ſame ſtate with regard to covering as they were in, while within the cavity of the belly.

THIS is the ſtate of the teſticle when it is got into the ſcrotum, the place appointed for its reſidence; and, leſt it ſhould deviate from the right path, and by not paſſing through the aperture in the muſcle, be detained within the cavity of the belly, that portion of the epididymis which precedes it in its paſſage toward the abdominal opening, inſinuates itſelf into the orifice which leads to the ſacculus appointed for its reception; by this means determining the paſſage of the teſticle, and preventing its deviation *.

IT is true, that in this, as well as every other part of the animal frame, the general laws of nature are ſometimes interrupted by accident, and mal-formations

* This muſt be underſtood as a deſcription of the appearance theſe parts make at firſt view: for both the epididymis and teſticle are truly behind the peritoneum.

mations are produced; but, in general, this is the proceſs, and this the appearance.

THE bag, which contains the teſticle when in the groin, is looſe and large, *compared to the ſize* of the *teſtis*; it is of a globular figure, is covered on its outſide by a cellular ſubſtance, and communicates with the cavity of the belly by *paſſing through the oblique* muſcle.

IF the teſticles remain any time in the groin, (a thing not very unfrequent) the communication between the ſacculi and the belly continues open all that time, at leaſt I have always found it ſo in all thoſe whom I have examined.

WHEN the teſticles are got below the groin into the ſcrotum, the ſacculi which contain them aſſume a pyriform kind of figure, having their largeſt end loweſt; they are connected with the membranes of the ſcrotum by means of the common cellular

cellular ſtructure, but ſo very looſely in young ſubjects as to be ſeparable with the utmoſt eaſe.

They ſtill for ſome little time continue to communicate with the cavity of the belly, by a large orifice capable in a mature fœtus, or in a child newly born, of admitting a common crow-quill. This the eye-ſight, the paſſage of a probe, or the deſcent of a fluid poured upon the mouth of the opening, will prove to the ſatisfaction of any inquirer; and if the ſaculus be now laid open, either from its bottom upward into the belly, or from its orifice within the belly downward, the moſt clear and convincing proof will appear, that the membrane which conſtitutes the inſide of it is a production of, or a continuation from, that part of the peritoneum which lines the abdominal muſcles, and covers the ſpermatic veſſels, *&c. &c* *.

Upon

* If this is doubted by any who have no immediate opportunity of examining it, I can ſhew it to them in more than one ſubject, which I keep by me.

Upon this diviſion of the ſacculus it will alſo appear, that the teſticle and epididymis within it have no other covering than what they brought out from the abdomen, and that notwithſtanding they are protruded into, and apparently contained within the ſacculus, yet they ſtill are (as they were originally) behind the peritoneum.

Whether it be by the weight of the teſticle now become pendulous from the ſpermatic chord, or from the action of the abdominal muſcles, or from what other cauſe, I know not; but ſoon after the teſticles are got fairly into the ſcrotum, the orifices and paſſages to theſe ſacculi are cloſed, and obliterated in ſuch manner, that neither a probe, nor a fluid will now paſs from the belly into them, nor from them into the belly.

The paſſage of communication becomes cloſe ſome way above the epidi-

dymis,

dymis, and the bag by this means forms a cavity much larger than the teſticle, which is looſely included in it, and kept moiſt by a fine lymph conſtantly found there.

The time at which this communication is ſtopt, by the paſſage being ſhut, is uncertain and various; for though it moſt frequently happens ſoon after the teſticles are got into the ſcrotum, yet it is not conſtantly ſo; I have ſeen them open at four years old; and in an adult; and others have ſeen them open at a time between theſe: but whenever they do cloſe, they form thoſe bags which are then called the tunica vaginales teſtium, from or to whoſe cavity there is no longer any paſſage.

Thus it plainly appears, that what in the fœtus was the little ſacculus for the reception of the teſticle, and what was the looſe bag which contained it while it ſtaid in the groin, (during all which

time there was a free communication with the cavity of the belly) does, by the closing and obliteration of that communication, become the tunica vaginalis testis, and consequently that the tunica vaginalis testis is a production of the peritoneum ; and that the cellular membrane which envelopes the spermatic vessels behind the peritoneum, by being gradually stretched and lengthened as the child grows, becomes the tunica vaginalis of the chord.

Such is the state and progress of these parts from the fœtus to the next stage beyond early infancy ; after which they undergo little or no alteration, which has any connexion with my present subject: but from their state in a fœtus, from the alteration they undergo, and the progress they make, from conception to infancy, the disease contained in the Title may, I think, be clearly and satisfactorily accounted for.

SECT.

SECT. III.

THE diſeaſe in queſtion is that kind of rupture, in which the portion of inteſtine or omentum which has paſſed out from the belly, is found in the ſame bag, and in contact with the naked teſticle; in contradiſtinction from the more frequent ſpecies of inteſtinal or omental rupture, in which the parts fallen from the belly are contained in what is called a hernial ſac, whoſe cavity is perfectly diſtinct from, and has no communication with, that in which the teſticle is included called tunica vaginalis teſtis.

I TOOK notice at the beginning of this Tract, that an attempt had been made to account for this, by ſuppoſing that the peritoneum ſuffers a breach, or is torn.

THEY

THEY who ſuppoſe this to be the caſe, do alſo ſuppoſe that the portion of inteſtine or omentum paſſed out from the belly at firſt in a common hernial ſac in the uſual manner; but that by time, or accident, a breach is made in the peritoneum forming that ſac, and thus theſe parts are brought into contact with the naked teſticle; which, moſt certainly is not the caſe: it is an original diſeaſe, unaltered by time or accident; and, though ſometimes met with in the adult, is always firſt produced in early infancy.

THE ſacculus which receives the teſticle when it has paſſed the aperture in the abdominal muſcle, is open to the cavity of the belly; and the ſame, cauſes, and the ſame force which puſh the teſticle into it, do alſo ſometimes thruſt in a portion of inteſtine or omentum.

In a natural ſtate, and according to the moſt uſual courſe, the openings or mouths of theſe ſacculi become cloſe, and the paſſages obliterated, ſoon after the teſticles get into the ſcrotum; the tunica vaginalis teſtis is thus formed, and all communication with the belly prevented; but if a piece of gut or caul has ſlipped in with, or juſt after the teſticle, the opening cannot cloſe; the tunica vaginalis teſtis cannot be properly formed, but the inteſtine, teſticle and omentum muſt be all together, in immediate contact with each other within this ſacculus, whoſe mouth muſt ſtill remain open to the abdomen.

And, as I have already taken notice, that the mouths of theſe ſacculi always remain open while the teſticle continues in the groin, a much longer time is by this means furniſhed in many ſubjects for this accident to happen in; not to mention again, that in ſome children

they do not close till the testicles have been a great while in the scrotum, and that they have been found open in adults.

Whoever has a clear idea of the state of these parts, must see, that whatever passes into these sacculi while they remain open, let the subject's age be what it may, must be in the same cavity, and in contact with the naked testicle; and though the passage from the belly will become close and be obliterated, if the parts which have fallen into it are returned back, and kept up by proper bandage; yet if they are not returned into the belly, or not kept there when returned, the passage can never close, and the hernia must for ever remain; and, while it does remain, will necessarily be of the kind mentioned in the Title.

For though this is a disease produced by such a state of parts as is peculiar to an

an infant, and which a ſmall ſpace of time makes ſuch an alteration in, as to prevent its happening after that ſtate of infancy, yet if it is not taken proper care of when it has happened, it will moſt probably continue during the life of the patient; and that therefore it muſt ſometimes be found in adults.—A caſe, which I am convinced, happens much oftner than is ſuſpected.

The more I have thought of this matter, the more I am convinced of the truth of what I have ſaid in the preceding pages; even accidents and malformations, which prevent the uſual and regular proceſs, contribute to elucidate the ſubject; and though they are deviations from the natural courſe, yet help to inform us what that would be, if it had not been prevented. A truth, which will appear in two of the following caſes.

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SECT. IV.

J. GOODCHILD, a man who had been ruptured from his infancy, was brought into St. Bartholomew's Hoſpital labouring under ſuch ſymptoms from ſtricture, as to render the operation immediately neceſſary, but to leave little room to expect that it would be ſucceſsful.

THE operation was performed in the uſual manner, but upon returning the inteſtine into the abdomen, I found that the teſticle was naked, and that the gut had been in contact with it.

THE man died the next day, and the parts were in ſo gangrenous a ſtate as not to permit any ſatisfactory examination of them; all that could be learnt was, that the inteſtine had been in the ſame cavity with the teſticle, and that the

the ſac containing them was open to the abdomen; this was all that appeared in this ſubject, which, though it did not give me much ſatisfaction in preſent, determined me to examine more cloſely ſuch caſes in future.

March 23, 1756. WILLIAM PEARCE, a healthy ſtout man, twenty-five years old, was brought into St. Bartholomew's Hoſpital, complaining of a painful ſwelling in his right groin, a ſlight degree of nauſea, and an incapacity of diſcharging any thing by ſtool.

THESE complaints had ſubſiſted three days, when he was taken into the houſe.

IN the groin on the right ſide was a ſwelling, about the ſize of a middling lemon, of an oblong figure; its greateſt length being tranſverſe or ſtretching from the pubis to the ilium, the tumor ſeemed pretty full, was conſtantly painful in ſome degree, but much more ſo upon being handled.

The ſcrotum on this ſide was deficient from his birth, and neither teſticle nor ſpermatic proceſs could be diſtinguiſhed.

The man being aſked, ſaid, that he had had more or leſs of this ſwelling ever ſince he could remember; that he had never been ſenſible of any teſticle on that ſide, and that he had formerly wore a bandage, but could not endure the pain it gave him.

The ſymptoms being ſuch as indicated a ſtricture on ſome part of the inteſtinal canal, I endeavoured to return the contents of the ſwelling into the belly, but could not ſucceed.

As his pain was not very great, except when the part was handled; as he had but little fever, and neither vomiting nor hiccup, I ordered him to be largely bled, to have a purging glyſter,

to

to cover the tumor with a ſoft pultice, and to keep in bed.

THE next day the ſwelling ſeemed rather abated, and leſs tenſe; his ſickneſs continued, but without any vomiting; he was perfectly eaſy in his belly, but had diſcharged nothing by ſtool.

I TRIED again to return the parts, but ineffectually; and, as the handling them was exceſſively painful to him, I ordered him to be again bled, to repeat his glyſter and pultice, and to take frequently two or three ſpoonfuls of a purging mixture, but ſtill could obtain no ſtool; and, on the third day, his pain being much increaſed, with the addition of hiccup and vomiting, I endeavoured to relieve him by the operation.

I BEGAN the inciſion in the uſual place, and continued it as low as the tumor reached.

Upon the diviſion of the ſkin and membrana adipoſa, a firm membranous bag or ſacculus came into view; this I took to be the hernial ſac; but, upon laying it open, I found that it contained a quantity of bloody ſerum, a piece of omentum, a portion of inteſtine, and the teſticle.

The teſticle and its epididymis were both naked; that is, they were not enveloped in a tunica vaginalis, and the bag which contained all theſe parts was open at its upper part into the cavity of the abdomen by a narrow neck, which neck paſſed through the aperture in the obliquus deſcendens muſcle, by the tendon of which that ſtricture was made on the inteſtine which produced the ſymptoms.

In this caſe neither the inteſtine nor the teſticle were got below the groin, there being no ſcrotum on that ſide; but the

the ſac which contained the teſticle, inteſtine and omentum, was plainly that ſacculus which was originally deſigned to become the tunica vaginalis teſtis; its communication with the belly, the ſtate of the teſticle and epididymis, and the date of the rupture, all prove this: The diſeaſe was from early infancy, the teſticle and epididymis had no covering but their proper and immediate coat; the ſacculus communicated with the cavity of the belly, and the teſticle was connected with its internal and lower part.

As the ſcrotum was deficient on that ſide, the teſticle could never deſcend ſo as to become pendulous, and thereby give the tunica vaginalis an opportunity of becoming cloſe at its upper part; and a piece of inteſtine having paſſed in, was another reaſon why the orifice could not contract itſelf; the teſticle always remaining juſt on this ſide the abdominal muſcle, in the groin, was the reaſon

why he never could keep the inteſtine within the belly by a truſs, the pad or bolſter of which muſt preſs on the teſtis in ſuch manner as to give great pain.

In July laſt, J. Leak, a man about thirty-five, was brought into St. Bartholomew's Hoſpital, with all the ſymptoms and all the appearances of a ſtrangulated inteſtine.

The gentleman under whoſe care he had been, had uſed all proper means to relieve him, and had endeavoured to return the parts, but without ſucceſs; and there was nothing left for me to do, but to perform the operation, which I did immediately. The ſwelling, which was confined to the groin, was more oblong than uſual, ſtretching from the pubis to the ilium, and had that inequality to the touch as implied a pretty large portion of omentum to be contained in it.

Upon making the inciſion, I obſerved that the hernial ſac was not enveloped by any tunica vaginalis, but that it lay immediately under the adipoſe membrane, and had none of thoſe fine tendinous bands or expanſions on its outſide, which are generally ſeen on the outſide of a common hernial ſac.

The ſac being laid open, the ſtricture divided, and the parts (which were a large portion of omentum, and a ſmall one of inteſtine) returned, the teſticle was found juſt within the aperture in the tendon of the abdominal muſcle, in the cavity of the belly; it was naked, and a portion of the epididymis was adherent to the upper part of the neck of that ſac, which had contained the gut and caul juſt at its paſſage through the tendon; the ſpermatic chord was ſo ſhort, as not to permit the deſcent of the teſticle any lower.

In this caſe, the teſticle not being capable of paſſing through the aperture in the muſcle, the omentum and inteſtine were puſhed out in its ſtead, and had dilated that ſacculus (which, if the teſticle had taken its natural courſe, would have formed its tunica vaginalis) into a hernial ſac, of ſize capable of containing a large portion of caul, and ſome inteſtine. This alſo was a rupture from early infancy, but the patient, not knowing what it was, had neglected it.

Soon after this I had an opportunity of looking into the body of a youth about fifteen years old, who died of another diſeaſe; but had been ruptured from his birth.

In a ſacculus, which paſſed through the opening in the abdominal muſcle, were contained a large portion of the inteſtine ilium, and a ſmall piece of the colon, in contact with the naked teſticle; the teſticle had no other covering than

its

its proper tunica albuginea, and the epididymis was united with the posterior part of the sac: The sac lay immediately under the membrana adiposa, and had no covering from the tunica vaginalis of the chord.

This is precisely that case, which is supposed to be occasioned by the breach both of the peritoneum, and of the septum between the two tunicæ vaginales; but which, I flatter myself, that I have proved in the foregoing pages, to be produced in another manner: certain I am, that the anatomy of the parts, both natural and diseased, give no countenance or support to the former opinion; and, if I am not hindered by prejudice and partiality from judging properly, the latter appears to me to have all the support from it which it can give.

By considering what has been said it will appear, that in this particular kind of hernia the bag containing the parts which have passed out from the abdo-

men, although it be really a production of the peritoneum, and paſſes through the tendon of the oblique muſcle, yet is not what is commonly meant by the term a hernial ſac; but is that ſacculus, which, if the inteſtine had not been puſhed into it, would, by cloſing at its upper part, have become the tunica vaginalis teſtis.

THAT this ſacculus cannot be included in the tunica vaginalis of the chord, no more than the ſac of the moſt frequent ſpecies of hydrocele is, it being the ſame bag in one caſe as in the other, with this difference only, that in the latter it is cloſe at top, and does not communicate with the belly; in the former it is open, and does communicate.

THAT the tunica vaginalis teſtis being open at its upper part to the cavity of the belly, the teſticle cannot be enveloped in it in the uſual manner, but muſt be

be found naked in the ſame common cavity with the inteſtine.

WHEREAS in the common hernia, the tunica vaginalis of the chord envelopes the ſac, the ſpermatic veſſels lie behind it, and the teſticle is included in a diſtinct cavity formed by the tunica vaginalis teſtis.

THE former caſe happens while the paſſage for the teſticle is open, and conſequently there can be no hernial ſac in the uſual ſenſe of the term, but the tunica vaginalis teſtis is thus converted into one.

THE latter (or common hernia) happening after this paſſage is obliterated, another portion of the peritoneum is thruſt before the inteſtine, *&c.* through the tendon of the muſcle into the groin or ſcrotum, thus conſtituting a hernial ſac; which ſac forms a cavity perfectly diſtinct from that of the tunica vaginalis teſtis, lies anterior to the ſpermatic chord,

chord, and is inveloped in the tunica vaginalis thereof.

By conſidering the ſtate of theſe parts in an infant, it will alſo appear, how neceſſary it is to be ſure of the ſituation of the teſticle before the pad of a truſs is applied to reſtrain a rupture; ſince if the teſticle is ſtill in the groin, it muſt not only be bruiſed and hurt by the preſſure, but will alſo be prevented from deſcending; whereas if it be got below the groin, the bandage will not only keep up the inteſtine, but contribute alſo to the cloſing of the tunica vaginalis teſtis; the ſame application thus becoming a cure in one caſe, and adding to the diſeaſe in the other.

Hence alſo the ſudden appearance, and ſometimes as ſudden diſſipation of tumors, either flatulent or watery, which are frequently ſeen about the ſpermatic chord, ſcrotum and teſticles of young infants, may be accounted for.

And

AND hence alſo may be ſeen the reaſon, why by far the greater number of children, who are ruptured in their early infancy, are males.

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